ZVOLINSKIY, V. P.

Conference devoted to the discussion of the concept of electronegativity. Zhur. VKHO 8 no.2:223-224 '63.
(MIRA 16:4)

(Chemical affinity—Congresses)

ZVOLINSKIY, V.P., nauchnyy sotrudnik

Lomonosov on petroleum. Nauka i zhizn' 30 no.6:15 Je '63.
(MIRA 16:7)

1. Institut istorii yestestvoznaniya i tekhniki AN SSSR.
(Petroleum geology)
(Lomonosov, Mikhail Vasil'evich, 1711-1765)

GAN MEN-KHUA [Kang Meng-hua]; GROMOV, K.Ya.; DZHELEPOV, B.S.; ZVOL'SKA, V.; ZVOISKIY, I.

Conversion electrons from Tu^{165}. Izv. AN SSSR. Ser. fiz. 25 no.9:1092-1095 '61. (MIRA 14:8)
(Thulium---Isotopes)
(Internal conversion(Nuclear physics))

GRIGOR'YEV, Ye.P.; GROMOV, K.Ya.; DZHELEPOV, B.S.; ZHELEV, Zh.T.; ZVOL'SKA, V.; ZVOL'SKIY, I.

Decay of $Yb^{166} \rightarrow Tu^{166} \rightarrow Er^{166}$. Izv AN SSSR.Ser.fiz. 25 no.10:1217-1227 O '61. (MIRA 14:10)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova, Ob"yedinennyy institut yadernykh issledovaniy.

(Ytterbium—Decay) (Thulium—Decay) (Erbium—Decay)

S/020/61/136/002/014/034
B019/B056

AUTHORS: Grigor'yev, Ye. P., Gromov, K. Ya., Dzhelepov, B. S., Corresponding Member of the AS USSR, Zvol'aka, V., Zolotavin, A. V., Veys, M., and Van Yun-yuy

TITLE: The Decay of the Two-hour Isotope Lu^{168}

PERIODICAL: Doklady Akademii nauk SSSR, 1961, Vol. 136, No. 2, pp. 325-328

TEXT: In the lutetium fraction forming in the course of an irradiation of tantalum with 660-Mev protons, conversion lines were discovered, which had a period of two hours. The authors investigated the lutetium isotope to which these lines belong. For this purpose they used a β-spectrometer with double focusing, the magnetic field was measured by means of proton resonance, and calibration was carried out according to exactly known lines. Recording was carried out by means of two Geiger-Müller counters. Three conversion lines with a period of (2.15 ± 0.20) hours were discovered; closer details are given in Table 1. By comparing the energy differences between these three lines with X-ray data, it was found that the Lu-isotope goes over into an ytterbium isotope. From the close study

The Decay of the Two-hour Isotope Lu^{168}

S/020/61/136/002/014/034
B019/B056

of the known Lu-isotopes, of their decays, and their spectra, the authors come to the conclusion that the required isotope with a period of 2.15 hours must be $_{71}Lu^{168}$, which has an odd-odd deformed nucleus. Fig. 3 shows the decay scheme of this isotope. There are 3 figures, 3 tables, and 5 references: 4 Soviet and 1 US.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova (Leningrad State University imeni A. A. Zhdanov)
Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: October 6, 1960

Card 2/2

S/048/62/026/001/012/018
B125/B102

AUTHORS: Grigor'yev, Ye. P., Dzhelepov, B. S., Zvol'ska, V., Zolotavin, A. V., Malysheva, T. V., Khotin, B. A., and Adam, I.

TITLE: Conversion electrons of the short-lived platinum and tungsten isotopes

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 1, 1962, 120 - 124

TEXT: The conversion electron spectra of the platinum and the tungsten fractions were measured by a β-spectrometer with double focusing by the method of nuclear resonance in the intervals 68 - 106 kev, and 70 - 90 kev, respectively. The neutron-deficient platinum and tungsten isotopes were produced by bombarding gold with 660-Mev protons. Table 1 gives the parameters of the 16 lines obtained for the platinum fraction. 7 of these lines have been newly discovered. The 106.43-kev transition cannot be attributed to one of the Pt isotopes but only to an Ir isotope. The intensity ratio of the lines L_{II} and L_{III} suggests an E2 or E3-type transition. Also for the 110.10-kev transition in an iridium nucleus

Card 1/3

the isotope on whose decay transition takes place cannot be determined due to its insufficiently accurate half line. The L_I, L_{II}, L_{III} lines with the energies 96.71, 97.25 and 98.87 kev of the 110.10-kev transition have a half life of (20±0.3) hr. The ratio of the line intensities of inner conversion on the L-subshells suggests a transition of type E1 or E2+M1. Also the 93.94-kev transition mentioned in 1960 at the X Soveshchaniye po yadernoy spektroskopii (Tenth Congress on Nuclear Spectroscopy) in Moscow takes place in an iridium nucleus. The three conversion lines with the half life (2.6±0.6) hr and the energies 72.4, 74.3, and 83.2 kev which the authors studied in the 70 - 90-kev spectral range belong to the decay of W^{176} or W^{177}. The first two lines are M- and N-lines of the 74.9-kev transition in Ta. The intensities of the (L_I+L_{II}), L_{III}, M, and N conversion lines of the well-known transition with $h\upsilon$ = 88.35 kev ($2^+ \rightarrow 0^+$) in Hf^{176} initially increase with the half life (2.5±0.4) hr and then decrease with the half life 8 hr of Ta^{176}. The half life 2.5 hr of W^{176} obtained by the author differs essentially from the value obtained by G. Wilkinson. There are 2 figures, 7 tables,

and 3 references: 2 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: G. Wilkinson, Phys. Rev., 80, 495 (1950).

ASSOCIATION: Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo gos. universiteta im. A. A. Zhdanova (Scientific Research Institute of Physics of Leningrad State University imeni A. A. Zhdanova). Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research). Institut geokhimii i analiticheskoy khimii im. V. I. Vernadskogo (Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy)

Table 1. Energies and half lives of the intensity decrease of some conversion lines of the platinum fraction.
Legend: (1) $T_{1/2}$(hr); (2) identification; (3) isotope.

40098
S/048/62/026/008/009/028
B104/B102

24.6300

AUTHORS: Gromov, K. Ya., Dzhelepov, B. S., Zvol'ska, V., Zvol'skiy, I., Lebedev, N. A., and Urbanets, Ya.

TITLE: The Tu^{167} decay scheme

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 8, 1962, 1019 - 1026

TEXT: To improve the decay scheme of Tu^{167}, the γ-spectrum was studied with a single-crystal scintillation spectrometer having a 100-channel pulse-height analyzer, and the spectrum of the conversion electrons of Tu^{167} with a double focusing β-spectrometer. The latter had a device for measuring the electric field by the proton resonance method for electron energies >56 kev; whereas for E_e <56 kev the magnetic field was measured with a probe. The Tu preparation was separated chromatographically from Ta which had been irradiated with 660-Mev protons. The results (Tables 1 and 2) deviate considerably from those of other authors and are considered to be the most accurate. After thoroughly studying the multiplicity of

Card 1/6 2

S/048/62/026/008/009/028
B104/B102

The Tu^{167} decay scheme

transitions in the Er^{167} nucleus, the decay scheme was plotted as in Fig. 5. There are 5 figures and 5 tables.

Table 1. Relative intensities of Tu^{167} γ-rays.

(1) E_γ, кэв	(2)	(3)	(4)
207,9	100	100	100
531,8	3,0±0,5	3,2±0,5	5,6
700	<0,15	(~0,8)	
790	<0,15	2,3±1	
880	<0,1	~1,1	

Legend: (1) E_γ, kev, (2) results, (3) K. Gromov, et al., Materialy III. Soveshchaniya po yadernoy spektroskopii. Preprint no. 613, Dubna, 1960, (4) H. Narasimhaian, M. L. Pool, Nucl. Phys., 21, 340 (1960).

GROMOV, K.Ya.; ZHELEV, Zh.T.; ZVOL'SKA, V.; KALINNIKOV, V.G.

Decay of Er^{161}. IAd. fiz. 2 no.5:783-793 N '65.

(MIRA 18:12)

1. Ob"yedinennyy institut yadernykh issledovaniy. 2. Sotrudnitsa Prazhskogo Instituta yadernykh issledovaniy, Chekhoslovakiya (for Zvol'ska).

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R0020657100017-2

ACC NR: AP6016896 SOURCE CODE: UR/0367/65/002/005/0783/0793

AUTHOR: Gromov, K. Ya.; Zhelev, Zh. T.; Zvol'ska, V.; Zvolska, V.; Kalinnikov, V. G.

ORG: Joint Institute of Nuclear Research (Ob"yedinennyy institut yadernykh issledovaniy); Zvol'ska/ Prague Institute of Nuclear Research (Prazhskiy institut yadernykh issledovaniy)

TITLE: Decay of Er sup 161

SOURCE: Yadernaya fizika, v. 2, no. 5, 1965, 783-793

33
B

TOPIC TAGS: radioactive decay, positron, erbium, holmium, spectrometer, electron spectrum

ABSTRACT: Positron radiation of Er^{161} (E_0 = 620 ± 40 keV) was observed with a triple-focusing magnetic spectrometer. Data are presented for the conversion electron spectrum and the multipolarity of certain transitions in the Ho^{161} nucleus. The $Er^{161} \longrightarrow Ho^{161}$ decay-scheme is determined and presented. The 1697 and 1943 keV levels are interpreted as three-quasi-particle states. The authors express deep thanks to A. V. Kudrymvtsevaya for the help on the work and to N. I. Pyatov and V. M. Mikhaylov for checking the decay-scheme. Orig. art. has: 5 figures and 2 tables. [JPRS]

SUB CODE: 20 / SUBM DATE: 09Apr65 / ORIG REF: 011 / OTH REF: 010

SOV REF: 012

Card 1/1 BLG

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2

S/048/63/027/002/005/023
B104/B186

AUTHORS: Grinev, K. Ya., Batsepov, P. S., Zvol'skaya, V., Zvol'skiy, I., Gustavson, A. V., Peleksis, L. L., and Peleksis, E. K.

TITLE: The Tu^{165} decay scheme

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 27, no. 2, 1963, 195-199

TEXT: The decay scheme of Tu^{165} suggested in a previous work by the authors (Izv. AN SSSR, Ser. fiz., 25, 1032 (1961)) was checked by $\gamma\gamma$-coincidence tests and by determining the multipole orders in the Er^{165} transitions. The spectrum of the conversion electrons was taken with a double focusing β-spectrometer in the range 5-80 kev. From the intensity ratios the multipole order for most transitions with energies of a few kev could be determined. The $\gamma\gamma$-coincidences were determined. [illegible] The [illegible] shown in the figure was constructed from the results. It is to be noted that if the positions

Card 1/3

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2

The Tu^{165} decay scheme

S/048/63/027/002/005/023
B104/B130

paper. There are 1 figure and 3 tables.

Fig. Tu^{165} decay scheme.
Legend: (1) 29 hours; (2) 10 hours.

GROMOV, K.Ya.; DZHELEPOV, B.S.; ZVOL'SKA, V.; ZVOL'SKIY, I.; KALINNIKOV, V.G.

Decay of Tu^{163}. Izv.AN SSSR.Ser.fiz. 27 no.2:182-194 F '63. (MIRA 16:2)

(Thulium isotopes--Decay)

GROMOV, K.Ya.; DZHELEPOV, B.S.; ZVOL'SKA, V.; ZVOL'SKIY, I.; LEBEDEV, N.A.; URBANETS, Ya.

Decay scheme of Tu^{167}. Izv. AN SSSR. Ser. fiz. 26 no.8: 1019-1026 Ag '62. (MIRA 15:11)

(Thulium--Decay)

GRIGOR'YEV, Ye.P.; DZHELEPOV, B.S.; ZVOL'SKA, V.; ZOLOTAVIN, A.V.; MALYSHEVA, T.V.; KHOTIN, B.A.; ADAM, I.

Conversion electrons from short-lived platinum and tungsten isotopes. Izv. AN SSSR. Ser. fiz. 26 no.1:120-124 Ja '62. (MIRA 15:2)

1. Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo gosudarstvennogo universiteta im. A.A.Zhdanova, Ob"yedinennyy institut yadernykh issledovaniy i Institut geokhimii i analiticheskoy khimii im. V.I.Vernadskogo.
(Electrons)
(Platinum—Isotopes)
(Tungsten—Isotopes)

Abs Jour : Ref Zhur - Biol., No 14, 1958, No 65594

Author : Pachnarova Eva, Brutar Vlastimil, Zvolska Eva
Inst : -
Title : The Possibility of Augmenting Lactation.

Orig Pub : Lekar. listy, 1954, 9, No 1, 10-14

Abstract : No abstract

Card : 1/1

SOYKOVA-PACHNEROVA, Eva; BRUTAR, Vlastimil; ZVOLSKA, Eva

Possibility of increasing of milk secretion in lactation; 2nd communication. Cesk. gyn. 19 no.4:275-279 July 54.

1. Z I. por. klin., predn. prof. MUDr Karel Klaus.
(LACTATION, physiology
milk secretion increasing, results of exper.)

SOV/48-23-7-16/31

21(7)

AUTHORS: Bunakov, V. Ye., Dzhelepov, B. S., Zvol'skiy, I., Sergiyenko, V.A.

TITLE: The Coincidences of the Conversion Electrons in the Decay $Se^{75} \longrightarrow As^{75}$ (Sovpadeniya konversionnykh elektronov pri raspade $Se^{75} \longrightarrow As^{75}$)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 7, pp 859-863 (USSR)

ABSTRACT: The authors investigated, by means of a lens-β-spectrometer, the coincidences of the conversion electrons of the above-mentioned decay, the isotope S^{75} being obtained by a (n,γ)-reaction in the irradiation of the enriched isotope Se^{74}. The decay of Se^{75} was investigated in a number of papers; the lines of the γ-spectrum and the coincidences are indicated. The spectrum, recorded by the spectrometer, of the conversion electrons of this decay is shown in figure 1, and is supplemented by the level scheme. The observed coincidences of conversion electrons are indicated, and it is ascertained that their relative number lies between 0.5 and 3. The coincidences of various lines recorded by the spectrometer are shown in

Card 1/2

several diagrams, and the results are discussed in detail. Finally, it is stated that the results obtained improve the data of previous papers (Refs 3-5). The authors thank A. V. Zolotavin for placing at their disposal the isotope Se^{75}, and mention L. Gorzhak, student of the LGU, who participated in the measurements. There are 5 figures, 1 table, and 6 references, 3 of which are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo gos. universiteta im. A. A. Zhdanova (Scientific Research Institute of Physics of the Leningrad State University imeni A. A. Zhdanov)

GAN MEN-KHUA [Kang Meng-hua]; GROMOV, K.Ya.; DZHELEPOV, B.S.; ZVOL'SKA, V.; ZVOLSKIY, I.

Conversion electrons from Tu^{165}. Izv. AN SSSR. Ser. fiz. 25 no.9:1092-1095 '61. (MIRA 14:8)
(Thulium--Isotopes)
(Internal conversion(Nuclear physics))

GRIGOR'YEV, Ye.P.; GROMOV, K.Ya.; DZHELEPOV, B.S.; ZHELEV, Zh.T.; ZVOL'SKA, V.; ZVOL'SKIY, I.

Decay of $Yb^{166} \rightarrow Tu^{166} \rightarrow Er^{166}$. Izv AN SSSR.Ser.fiz. 25 no.10:1217-1227 O '61. (MIRA 14:10)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova, Ob"yedinennyy institut yadernykh issledovaniy.

(Ytterbium—Decay) (Thulium—Decay) (Erbium—Decay)

DZHELEPOV, B.S.; ZVOL'SKIY, I.; NIKITIN, M.K.; SERGIYENKO, V.A.

Coincidences between conversion electrons of the dysprosium fraction. Izv.AN SSSR.Ser.fiz. 25 no.10:1246-1255 O '61. (MIRA 14:10)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova i Ob"yedinennyy institut yadernykh issledovaniy.
(Electrons—Spectra) (Dysprosium—Decay)

DZHELEPOV, B.S.; ZVOLINSKIY, I.; SERGIYENKO, V.A.

Coincidences between conversion electrons produced in the decay of $Ho^{160} \rightarrow Dy^{160}$. Izv.AN SSSR.Ser.fiz. 25 no.10:1228-1245 O '61. (MIRA 14:10)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova, Ob"yedinennyy institut yadernykh issledovaniy.
(Holmium--Decay) (Dysprosium--Decay)

S/048/62/026/002/005/032
B101/B102

AUTHORS: Dzhelepov, B. S., Zvol'skiy, I., Nikitin, M. K., and Sergiyenko, V. A.

TITLE: Coincidences between conversion electrons resulting from the Dy^{153} — Tb^{153} decay

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 2, 1962, 202-204

TEXT: The coincidences between conversion electrons of the transitions of 80.84 + 82.48; 99.7, and 147.5 + 149.0 kev with Dy^{153} electrons of 170-230 and 173.6 kev were studied (Figs. 1, 2). The Dy fraction was chromatographically separated from a tantalum target bombarded with 660-Mev protons. The sources contained Dy^{153} ($T_{1/2}$ = 6.4 hrs); Dy^{155} (10 hrs); Dy^{157} (8 hrs); Dy^{159} (144 days); Tb^{153} (2.3 days); and Tb^{155} (5 days). As the measurements with a double-lens beta-ray spectrometer began 18 hrs after the irradiation of the Ta target and took about 15 hrs, the short-lived Dy isotopes with A < 153 had already decayed. The Dy

Coincidences between conversion...

preparation was precipitated onto a slightly aluminized collodion film. It is concluded from the experimental data that the 80.8-, 163.3-, and 253.3-kev levels excited in the Dy^{153} decay do exist in Tb^{153}.
Ye. N. Rozhin, K. Ya. Gromov, and V. A. Khalkin are thanked for assistance.
There are 3 figures, 1 table, and 5 Soviet references.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research). Leningradskiy gos. universitet im. A. A. Zhdanova (Leningrad State University imeni A. A. Zhdanov)

Fig. 1. Coincidences of L80.84 Dy^{153} + L82.48 Dy^{153} + L83.01 Dy^{157} electrons. Broken line: spectrum of conversion electrons, recorded by one half of the spectrometer. Continuous line: count rate of coincidences.

Legend: abscissa: Hρ, oe·cm. Ordinate: left: $N_{single} \cdot 10^{-3} \cdot min^{-1}$; right: $N_{coinc} \cdot 10^{-2}\ hr^{-1}$.

Coincidences between conversion...

Fig. 2a. $N_{sinlge} \cdot 10^{-4}$ min^{-1} as a function of Hρ.

Fig. 2b. spectrum of conversion electrons. Diagram (a): coincidences of K99.7 electrons of Dy^{153}; diagram (б): coincidences of L80.84 + L82.48 electrons of Dy^{153} + L83.01 electrons of Dy^{157}; diagram (в): coincidences of K147.5 + K149.0 + L99.7 electrons of Dy^{153}.

Legend: abscissa: Hρ, oe·cm; ordinate of diagrams (a), (б), and (в): $N_{coino} \cdot hr^{-1}$.

Card 3/4

40098
S/048/62/026/008/009/028
B104/B102

24.6300

AUTHORS: Gromov, K. Ya., Dzhelepov, B. S., Zvol'ska, V., Zvol'skiy, I., Lebedev, N. A., and Urbanets, Ya.

TITLE: The Tu^{167} decay scheme

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 8, 1962, 1019 - 1026

TEXT: To improve the decay scheme of Tu^{167}, the γ-spectrum was studied with a single-crystal scintillation spectrometer having a 100-channel pulse-height analyzer, and the spectrum of the conversion electrons of Tu^{167} with a double focusing β-spectrometer. The latter had a device for measuring the electric field by the proton resonance method for electron energies >56 kev; whereas for E_e <56 kev the magnetic field was measured with a probe. The Tu preparation was separated chromatographically from Ta which had been irradiated with 660-Mev protons. The results (Tables 1 and 2) deviate considerably from those of other authors and are considered to be the most accurate. After thoroughly studying the multiplicity of

Card 1/ 2

S/048/62/026/008/009/028
B104/B102

The Tu^{167} decay scheme

transitions in the Er^{167} nucleus, the decay scheme was plotted as in Fig. 5. There are 5 figures and 5 tables.

Table 1. Relative intensities of Tu^{167} γ-rays.
Legend: (1) E_γ, kev, (2) results, (3) K. Gromov, et al., Materialy III. Soveshchaniya po yadernoy spektroskopii. Preprint no. 613, Dubna, 1960, (4) H. Narasimhaian, M. L. Pool, Nucl. Phys., 21, 340 (1960).

(1) E_γ, кэв	(2)	(3)	(4)
207,9	240±35 100	100	165 100
531,8	3,6±0,5	3,2±0,5	5,6
700	≤0,15	(~0,8)	—
790	≤0,15	2,3±1	—
880	≤0,1	~1,1	—

GROMOV, K.Ya.; YENCHEV, D.A.; ZHELEV, Zh.T.; ZVOL'SKIY, I.; KALINNIKOV, V.G.; KUZNETSOV, V.V.; MA KHO IK; MUZIOL', G.; KHAN' SHU-ZHUN' [Han Shu-jun]

Decay scheme of Tb^{152}. IAd. fiz. 1 no.4:562-572 Ap '65. (MIRA 18:5)

1. Ob"yedinennyy institut yadernykh issledovaniy.

GROMOV, K.Ya.; DZHELEPOV, B.S.; ZVOL'SKA, V.; ZVOL'SKIY, I.; KALINNIKOV, V.G.

Decay of Tu^{163}. Izv.AN SSSR.Ser.fiz. 27 no.2:182-194 F '63. (MIRA 16:2)

(Thulium isotopes--Decay)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2

S/048/63/027/002/009/021
B104/B186

AUTHORS: [illegible]

TITLE: The ^{165}[illegible] decay scheme

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 27, no. 2, 1963, 195-197

TEXT: The decay scheme of ^{165}[illegible] suggested in a previous work by the authors [Izv. AN SSSR, Ser. fiz., 25, 1961] was checked by $\gamma\gamma$-coincidence tests and by determining the multipole orders in the ^{165}Er transitions. The spectrum of the conversion electrons was taken with a double focusing β-spectrometer in the range 5-50 kev. From the [illegible] the multipole orders of the transitions were determined [illegible] Card 1/3

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2

S/048/63/027/002/005/013
B104/B180

The Tu^{165} decay scheme

paper. There are 1 figure and 3 tables.

Fig. Tu^{165} decay scheme.
Legend: (1) 70 hours; (2) 11 hours.

Card 2/3

GROMOV, K.Ya.; DZHELEPOV, B.S.; ZVOL'SKA, V.; ZVOL'SKIY, I.; LEBEDEV, N.A.; URBANETS, Ya.

Decay scheme of Tu^{167}. Izv. AN SSSR. Ser. fiz. 26 no.8: 1019-1026 Ag '62. (MIRA 15:11)

(Thulium--Decay)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

1. ZVOM SKEW

2. USSR (600)

4. Briquets (Fuel)

7. Briquetting lumber waste. Za ekon. mat. no. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, May 1953. Unclassified.

ZVOL'SKIY, P.I.

Results of the revision of plans and estimates in the Perm Economic Region. Prom.stroi. 37 no.10:7-10 O '59. (MIRA 13:2)

1. Leningradskiy Promstroyproyekt.
(Perm Province--Construction industry--Costs)

ZVOL'SKIY, S. T.

ZVOL'SKIY, S. T.: "Determination of the relative content of isotopes in bicomponential low-activity mixtures using the beta-ray absorption method." Kiev State Pedagogical Inst imeni A. M. Gor'kiy. Kiev, 1956.
(Dissertation for the Degree of Candidate in Physicomathematical Sciences.)

SO: Knizhnaya Letopis', No. 26, 1956

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

ZVOL'SKIY, S.T. [Zvol's'kyi, S.T.]

All-Union Conference on Peaceful Use of Atomic Energy. Geol. zhur. 18 no.1:109-110 '58. (MIRA 11:5)
(Atomic power--Congresses)

BABINETS, A.Ye. [Babynets', A.IE.]; ZVOL'SKIY, S.T. [Zvol'skyi, A.IE.]

Determination of the moisture content and compactness of soils by means of radioactive isotopes. Geol.zhur. 18 no.5:12-22 '58. (MIRA 12:1)

(Soils--Analysis) (Radioisotopes)

ZVOL'SKIY, S. [Zvol's'kyi, S.], kand.fiziko-matem.nauk; LYAL'KO, V., inzh.-geolog

The rays that look into the depths. Znan. ta pratsia no.5:6-7 My '60.
(Prospecting--Geophysical methods)

BABINETS, A.Ye. [Babynets', A.IE.]; ZVOL'SKIY, S.T. [Zvol's'kyi, S.T.]

Results of the utilization of trace neutrons and gamma rays in the study of soil moisture and density. Geol. zhur. 20 no. 4:45-53 '60. (MIRA 14:4)

(Soil physics) (Trace elements) (Gamma rays)

BABINETS, Audrey Yevtikhiyevich; ZVOL'SKIY, Stanislav Timofeyevich; BURKSER, Ye.S., otv.red.; SHTUL'MAN, I.F., red.izd-va; YEFIMOVA, M.I., tekhn.red.

[Investigation of the compactness and moisture content of soils by means of radioactivity] Issledovanie plotnosti i vlazhnosti gruntov metodami radioaktivnykh izluchenii. Kiev, Izd-vo Akad.nauk Ukrainskoi SSR, 1961. 139 p. (Akademiia nauk URSR, Kiev, Instytut geologichnykh nauk. Trudy. Seriia gidrogeologii i inzhenernoi geologii, no.6.). (MIRA 15:5)

1. Chlen-korrespondent AN USSR (for Burkser).
(Radioactivity) (Soil research)

ZVOLSKIY, S.T.

102

PHASE I BOOK EXPLOITATION SOV/5592

Vsesoyuznoye soveshchaniye po vnedreniyu radioaktivnykh izotopov i yadernykh izlucheniy v narodnom khozyaystve SSSR. Riga, 1960.

Radioaktivnyye izotopy i yadernyye izlucheniya v narodnom khozyaystve SSSR; trudy Vsesoyuznogo soveshchaniya 12 - 16 aprelya 1960 g. g. Riga, v 4 tomakh. t. 4: Poiski, razvedka i razrabotka poleznykh iskopayemykh (Radioactive Isotopes and Nuclear Radiation in the National Economy of the USSR; Transactions on the Symposium Held in Riga, April 12 - 16, 1960, in 4 volumes. v. 4: Prospecting, Surveying, and Mining of Mineral Deposits) Moscow, Gostoptekhizdat, 1961. 284 p. 3,640 copies printed.

Sponsoring Agency: Gosudarstvennyy nauchno-tekhnicheskiy komitet Soveta Ministrov SSSR. Gosudarstvennyy komitet Soveta Ministrov SSSR po ispol'zovaniyu atomnoy energii

Eds. (Title page): N. A. Petrov, L. I. Petrenko, and P. S. Savitskiy; ed. of this volume: M. A. Speranskiy; Scientific ed.: M. A. Speranskiy; Executive Eds.: N. N. Kuz'mina and A. G. Ionel';

Card 1/11

Radioactive Isotopes and Nuclear (Cont.) SOV/5592

Tech. Ed.: A. S. Polosina.

PURPOSE : The book is intended for engineers and technicians dealing with the problems involved in the application of radioactive isotopes and nuclear radiation.

COVERAGE: This collection of 39 articles is Vol. 4 of the Transactions of the All-Union Conference of the Introduction of Radioactive Isotopes and Nuclear Reactions in the National Economy of the USSR. The Conference was called by the Gosudarstvennyy nauchno-tekhnicheskiy komitet Sovet Ministrov SSSR (State Scientific-Technical Committee of the Council of Ministers of the USSR), Academy of Sciences USSR, Gosplan SSSR (State Planning Committee of the Council of Ministers of the USSR), Gosudarstvennyy komitet Soveta Ministrov SSSR po avtomatizatsii i mashinostroyeniyu (State Committee of the Council of Ministers of the USSR for Automation and Machine Building), and the Council of Ministers of the Latvian SSR. The reports summarized in this publication deal with the advantages, prospects, and

Card 2/11

development of radioactive methods used in prospecting, surveying, and mining of ores. Individual reports present the results of the latest scientific research on the development and improvement of the theory, methodology, and technology of radiometric investigations. Application of radioactive methods in the field of engineering geology, hydrology, and the control of ore enrichment processes is analyzed. No personalities are mentiond. There are no references.

TABLE OF CONTENTS:

URBANEC, J.; KAJFOSZ, J.; ZVOLSKY, J.[Zvol'skiy, I.]; NOVGORODOV, A.

Investigation of $Dy^{155} \rightarrow Tb^{155}$ decomposition. Chekhosl fiz zhurnal 13 no.8:573-578 '63.

1. Laboratoriya yadernykh problem, Ob"yedinennyy institut yadernykh issledovaniy, Dubna, SSSR.

ZVOLSKY, Josef, dr.

New trends in oral hydiene. Prum potravin 13 no.4:189-190 Ap '62.

1. Severoceske tukove zavody, n.p., Usti nad Labem.

ZVOLSKY K.

J-11

CZECHOSLOVAKIA /Chemical Technology. Chemical Products and Their Application - Fats and oils. Waxes. Soap. Detergents; Flotation reagents

Abs Jour : Referat Zhur - Khimiya, No 2, 1958, 6078

Author : Zvolsky K., Redlich P.

Inst : Not given

Title : Chromatography in the Industry of Fats

Orig Pub : Prumysl potravin, 1955, 6, No 11, 559

Abstract : It is shown that it is possible to separate, by the chromatographic method, 7 pure fat acids (lauric, myristic, palmitic, stearic, butyric, linolenic and erucic).

Card 1/1

ZVOLSKY, P.; MALINA, L.

Mental factors in vitiligo. Cesk. psychiat. 59 no.4:222-228 Ag '63.

1. Psychiatricka klinika fakulty vseobecneho lekarstvi KU v Praze Dermatologicka klinika lekarske fakulty hygienicke KU v Praze.

(VITILIGO) (PSYCHOLOGY)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

ZVOLSKY, P.

The age factor in the outcome of therapeutic results in alcoholics.
Cesk. psychiat. 58 no.5:321-323 O '62.

1. Psychiatricka klinika fak. vseob. lek. University Karlovy v Praze.
(ALCOHOLISM) (AGING)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

ZVOLSKY, P.

Genetics in psychiatry. Cas. lek. cesk. 102 no.50:234-236 13 D'63.

1. Psychiatricka klinika fakulty vseobecneho lekarstvi KU v Praze; prednosta: prof. dr. V.Vondracek, DrSc.

CZECHOSLOVAKIA

ZVOLSKY, P., Psychiatric Clinic (Psychiatricka klinika), Faculty of General Medicine (Fakulta vseobecneho lekarstvi), Charles University, Prague, and MALINA, L., Dermatological Clinic (Dermatologicka klinika), Faculty of Medical Hygiene (Lekarska fakulta hygienicka), Charles University, Prague.

"Psychic Factors in Vitiligo"

Prague, Ceskoslovenska Psychiatrie, Vol LIX, No 4, August 63, pp 222-228.

Abstract [Authors' English summary]: Two groups of patients suffering from vitiligo were investigated from the view point of psychic factors in the origin and development of the disease. It was found that the random group, and more so the group with stressful factors linked to the onset of the disease, differed significantly from the control group. Authors argue against the view that psychic factors play a decisive role in the development of vitiligo. Fifteen references, including 1 Czech.

HASKOVEC, L.; ZVOLSKY, P.; FALTUS, F.

Neuroses in the general practice. (A group of neurotics from the center of district physicians and its comparison with a similar group from a psychiatric clinic). Cesk. psychiat. 61 no.5:314-330 O '65.

1. Psychiatricka klinika fakulty vseobecneho lekarstvi Karlovy University v Praze.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2

L 43006-65 SOURCE CODE: UR/0083/65/000/005/0314/0330

ACC NR: AP6031816

AUTHOR: Haskovec, L.--Gashkovets, L.; Zvolsky, P.--Zvol'skiy, P.; Faltus, F.--Fal'tus, F.

ORG: Psychiatric Clinic, Faculty of General Medicine, Charles University, Prague (Psychiatricka klinika fakulty vseobecneho lekarstvi KU)

TITLE: Neurosis in the outpatient offices of general practitioners

SOURCE: Ceskoslovenska psychiatrie, no. 5, 1965, 314-330

TOPIC TAGS: psychoneurotic disorder, clinical medicine, health, psychology, psychiatry

ABSTRACT: Detailed study of 103 outpatient neurotic patients from various general practitioners in Prague compared with clinic patients by a number of criteria. In general, the former were either very severe and chronic neurotics or very early and mild cases, the clinic cases being more homogeneous in this regard. In former patients, somatic and occupational problems predominated; in the clinic patients, affective and sexual or marital ones overshadowed everything else. Conclusions for practice and public health policy. Orig. art. has: 17 tables. [Based on authors' Eng. abst.] [JPRS: 33,500]

SUB CODE: 06 / SUBM DATE: none / ORIG REF: 004

Card 1/1 MLP

0919 0564

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

BIAN, Josef, inz. CSc.; ZVONAR, Ladislav, Inz.

Alloys for thermocouples used in the metallurgical industry.
Hut listy 19 no. 6:421-425 Je '64.

1. Research Institute of Metals, Panenske Brezany (for Bican).
2. Kovohuts Vestec National Enterprise (for Zvonar).

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

ZVONAR, V.

SOV/4982

International symposium on macromolecular chemistry, Moscow, 1960.

Mezhdunarodnyy simpozium po makromolekulyarnoy khimii SSSR, Moskva, 14-18 iyunya 1960 g.; doklady i avtoreferaty. Sektsiya I. (International Symposium on Macromolecular Chemistry Held in Moscow, June 14-18, 1960; Papers and Summaries. Section I.) [Moscow, Izd-vo AN SSSR, 1960] 346 p. 5,500 copies printed.

Sponsoring Agency: The International Union of Pure and Applied Chemistry, Commission on Macromolecular Chemistry

Tech. Ed.: T. V. Polyakova.

PURPOSE: This collection of articles is intended for chemists and researchers interested in macromolecular chemistry.

COVERAGE: This is Section I of a multivolume work containing scientific papers on macromolecular chemistry in Moscow. The material includes data on the synthesis and properties of polymers, and on the processes of polymerization, copolymerization, polycondensation, and polyrecombination. Each text is presented in full or summarized in French, English, and Russian. There are 47 papers, 28 of which were presented by Soviet, Rumanian, Hungarian, and Czechoslovakian scientists. No personalities are mentioned. References accompany individual articles.

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49

ZVONAR, Vladimir

H

CZECHOSLOVAKIA/Chemical Technology. Chemical Products and Their Application, Part 4. - Varnishes, Paints, Paint Coatings.

Abs Jour: Referat. Zhurnal Khimiya, No 21, 1958, 72552.

Author : Vladimir Zvonar.
Inst :
Title : Colorimetric Determination of Cobalt in Siccatives.

Orig Pub: Chem. prumysl, 1957, 7, No 9, 512-514.

Abstract: A rapid and simplified method of quantitative determination of Co in siccatives is proposed: a sample containing from 0.4 to 4.0 mg of Co is boiled with 20 ml of dilute HCl until it decomposes (about 10 min.), after which it is diluted with acetone to 100 ml and colormetered with NH_4 using a calibration curve. The relative error of this determination is 1

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

H

CZECHOSLOVAKIA/Chemical Technology, Chemical Products and Their Application, Part 4. - Varnishes, Paints, Paint Coatings.

Abs Jour: Referat. Zhurnal Khimiya, No 21, 1958, 72552.

to 2% usually, but it reaches 5%, if the Co content was very great or very little, i.e., the error is of the same order as in the case of methods of Co determination requiring much time (combustion of the sample etc.). The content of Mn and some other metals in the siccative interferes with the determination accuracy; Fe should be preliminarily converted into pyrophosphate complex.

Card : 2/2

Distr: 4E2c(j)

Melt viscosities of low-molecular-weight polycondensates. Miloslav Bohdanecký, Jiří Tamchyna, and Vladimír Zvonař (Research Inst. Synthetic Resins & Varnishes, Pardubice, Czech.). *Chem. průmysl* 8(33), 383–6(1958).—Novolaks were prepd. by the condensation of *p*-*tert*-butylphenol and HCHO (molar ratio 1:1) in 1% H_2SO_4 at 100°. After purification by distn. at 200–60° and 1 mm. Hg under N, they were fractionated from 10% MeOH with H_2O. Polyesters were prepd. from phthalic and maleic anhydride (molar ratio 1:4) and ethylene glycol by heating under CO_2. The mol. wts. of the novolaks were detd. cryoscopically in dioxane and ebulliometrically in toluene. The mol. wts. of the polyesters were detd. by end-group analysis. The melt viscosity of the novolaks was detd. in an evacuated capillary viscometer with a weighed sample fused in. The melt viscosity of the polyesters was detd. in a Höppler viscosimeter or a Höppler microplastometer. At const. temp. T, $\log \eta$ was a linear function of the mol. wt. M for the novolaks and a linear function of $\log M$ for the polyesters. The dependence on T was expressed by Vogel's equation: $\log \eta = \log B + A/(T - T_0)$. For the novolaks, $B = 1.60 \times 10^{-4}$, $A = 160 + 0.6M$, and $T_0 = 300$. For polyesters, $B = 1.62$, $A = 3761 \log (M/60)$, and $T_0 = 240$. The temp. coeff. cannot be simply related to the activation energy of viscous flow, because it also depends on structural changes such as H-bond associn.

H. Newcomlie

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

ZVONAR, V.

"Multilaminate Glass Textile, a New Construction Material," p. 822. (STROJIRENSTVI. Vol. 4, No. 11, Nov. 1954; Praha, Czech.)

So: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 4, April 1955, Uncl..

ZVONAR, V.; NOVY, K.

Working laminated plastics reinforced with Fiberglas. p. 837. (STROJIRENSTVI, Vol. 6, No. 12, Dec 1956, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 12, Dec 1957. Uncl.

CZECHOSLOVAKIA/Organic Chemistry. Synthetic Organic Chemistry. G-2

Abs Jour: Ref Zhur-Khim., No 24, 1958, 81508.

Author : Yuracka F., Zvonar V.
Inst :
Title : Synthesis of Organic Peroxides.

Orig Pub: Chem. prumysl. 1957, 7, No 4, 192.

Abstract: It is possible to have explosions during the preparation of peroxides according to Zwakha's method (Ref. Zhur-Khimiya, 1958, 61842). The danger of explosion can be eliminated by adding dimethyl-dibutyl phthalate (I) or tricresyl phosphate to the reaction mixture. Thus, a phlegmatized peroxide is obtained in liquid form or as a paste, which is used in polymerizations; for instance a 50% solution of $CH_3COOCOC_6H_5$ or the peroxide

Card : 1/2

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

ZVONAR, V.

Remarks of the synthesis of organic peroxides.

p. 192 (Chemicky Prumysl. Vol. 7, no. 4, Apr. 1957, Praha, Czechoslovakia)

Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 2, February 1958

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

ZVONAR, V.

Colorimetric determination of cobait in siccatives.

p. 512 (Chemicky Prumysl. Vol. 7, no. 9, Sept. 1957, Praha, Czechoslovakia)

Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 2,
February 1958

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

I

CZECHOSLOVAKIA/High Polymer Chemistry.

Abs Jour: Ref Zhur-Khim., No 8, 1959, 29998.

Author : Bohdanecky, M., Tanchyna, J, and Zvonar, V.
Inst :
Title : The Viscosity of Fused Low Molecular Weight Polycondensates.

Orig Pub: Chem Prumysl, 8, No 7, 382-385 (1958) (In Czech with English and Russian summaries)

Abstract: It has been found that the Vogel equation gives an adequate picture of the temperature dependence of the viscosity of unsaturated polyesters and fused phenol and p-ter-butylphenol. At constant temp log increases linearly with the MW of lacquer resins and varies as the log of the MW of polyesters. Summary by the authors.

Card : 1/1

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

80407

Z/009/60/000/01/034/038
E112/E253

5.3832

AUTHORS: Hudeček, Z., and Zvonař, V [redacted]

TITLE: The Effect of the Constitution of Polyester Resins on the Optical Properties of Corrugated Roofings

PERIODICAL: Chemický průmysl, 1960, Nr 1, pp 44-50

ABSTRACT: The authors have studied the properties of laminated glass fibres for corrugated roofing materials. These should be able to transmit as much light as possible. Ideal conditions would be if refractive indices, dispersion and heat-coefficient would be identical for both, the glass fibre and the hardened resin. It has to be born in mind that the optical properties of the resin are changed after setting and polymerisation and the problem is thus reduced to the preparation of a resin which would have identical optical properties to that of the glass fibres. The glass fibres used for the laminates were in all cases boron-glasses, free of alkali of a refractive index 1.548 to 1.553 and an Abbé number 46 to 48. The aim of the present investigation has been the establishing of the fundamental optical properties of unsaturated polyester resins, the effect of starting

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

80407

Z/009/60/000/01/034/038
E112/E253

The Effect of the Constitution of Polyester Resins on the Optical Properties of Corrugated Roofings

materials and the change of optical properties during polyesterification and copolymerisation. The authors describe methods of testing. Samples to be tested were prepared by pouring the resins on glass plates and hardening at 100°C in an oven. Methylcyclohexanone-peroxide was used as initiator and cobalt naphtenate was the accelerator. The refraction indeces and mean dispersion were measured by Refracto meter, type Meopta, at -20°C, 0°C, 20°C, 40°C. The following variants were studied:

1. Effect of degree of polymerisation: It was seen that during polyesterification the refractive index increases. Particularly rapidly at the beginning of the reaction.

2. Effect of acid: The authors have studied the optical properties of polyester from maleic, itaconic, and citraconic acid with ethylene glycol. The resins were modified with phthalic anhydride. Results are tabulated, indicating that the character of the unsaturated acid has only very little influence on the optical properties. A very much greater influence is exerted by the saturated

Card 2/5

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

Z/009/60/000/01/034/038
E112/E253

The Effect of the Constitution of Polyester Resins on the Optical Properties of Corrugated Roofings

dicarboxylic acid which is used as modifier. The greatest increase in the refractive index is caused by chlorinated aromatic acids, such as tetrachloro phthalic acid. Effect of modifying acids are given in two tables. The authors have also established that saturated aliphatic dicarboxylic acids reduce the refractive index of the unsaturated polyester.

3. Effect of dioles: Similarly to the acids, the alcoholic components have also an effect upon the optical properties, although not quite so pronounced. The refractive index does not depend on the length of the chain but on the character of the hydroxyle groups, that means whether they are primary, secondary or terciary. The refractive index decreases with increased substitution. The presence of a chlorine in the molecule of the diole considerably increases the refractive index, but an ether-linkage works in the opposite way. The lowest refractive indeces are obtained from dipropylene glycol.

Card 3/5

30407

Z/009/60/000/01/034/038
E112/E253

The Effect of the Constitution of Polyester Resins on the Optical Properties of Corrugated Roofings

4. Effect of Monomers: The authors have studied the effect of styrene and methyl methacrylate. Whereas the effect of styrene was negligible that of methyl methacrylate was considerable.

5. Effect of temperature: The refractive index is affected by temperature in a linear relationship but it was seen that the character of the polyester itself exerts only a small effect. The influence of the monomer is of greater importance. The authors conclude from their work that it is almost impossible to produce a glass laminate in which the optical properties of glass and resin can be completely compensated. The best method of modification of optical properties would seem to be the choice of the diole and the saturated dicarboxylic acid, while the unsaturated acids show hardly any effects. The authors suggest as starting materials 1.3-butanediole and cycloolefinic acids. A further modification may be achieved by diluting the polyester resin with methyl methacrylate. The authors were unable to eliminate the differences of thermal coefficience

Card 4/5

E0407
Z/009/60/000/01/034/038
E112/E253

The Effect of the Constitution of Polyester Resins on the Optical Properties of Corrugated Roofings

between glass and resin.
There are 6 figures, 6 tables and 8 references, 4 of which are German, 1 Czech, 1 Japanese and 1 Swedish.

ASSOCIATION: Výzkumný ústav syntetických pryskyřic a laků, Pardubice (Research Institute of Synthetic Resins and Varnishes, Pardubice)

SUBMITTED: June 30, 1959

Card 5/5

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

39002
Z/009/62/000/006/002/002
E112/E153

11.2220

AUTHOR: Zvonař, Vladimir

TITLE: Thermodynamics of fire resistance of unsaturated polyester resins

PERIODICAL: Chemický průmysl, no.6, 1962, 321-326

TEXT: Theoretical aspects of the burning and flammability of synthetic resins are discussed. A free radical mechanism is postulated which, similarly to a free radical initiated polymerisation, is characterised by chain propagation, termination, transfer and inhibition. The fire and flame retarding action of some substances, particularly the halogenated hydrocarbons, is based on chain termination but the exact mechanism is unknown. It is proposed that they function by withdrawing free hydrogen atoms or hydroxyl radical by reaction with the halogen. Halogenated hydrocarbons with more labile halogen substituents (bromine or iodine) will, consequently, provide a greater flame retarding efficiency, e.g. hydrogen, containing 15% methyl bromide, cannot, practically, be ignited. The function of antimony oxide as a fire retarding filler is discussed. Practical

Card 1/3

work includes the determination of the correlation of structure of resin, its thermodynamic parameters and fire resistance. Only chlorinated resin components are considered and the effect of the nature of the chlorine bond on fire resistance is determined. The method of investigation consists of comparing structurally analogous chlorinated and non-chlorinated resin components, e.g. propylene glycole (1,2); 3-chloropropylene glycole (1,2); phthalic acid; tetrachlorophthalic acid, etc. Other chlorinated hydrocarbons under investigation included: dichlorendomethylene-hexahydrophthalic-anhydride, hexachlorendomethylele-tetrahydro-phthalic-anhydride, chlorotetrahydrophthalic acid. Result: best flame-proofing action was achieved by modifying the resin with hexachlorendomethylene-tetrahydrophthalic anhydride (HET). The other chlorinated modifiers were less active. The addition of antimony oxyde improved considerably the basic fire-resistance of the polyester resin. Characteristic parameters of the burning of resins (length of flame, loss of weight, rate of burning, temperature of ignition and flame extinction) are affected by the concentration of antimony oxyde in the resin mixture, by the

chlorine content and by the temperature to which the resin is exposed. The parameters' numerical values increase with increased temperature, with the result that at sufficiently high temperatures all differences of flammability between standard- and modified resins disappear. The numerical values of the parameters decrease with an increase of the chlorine content of the resin, and this is in agreement with the free radical theory of flame inhibition.
There are 5 figures and 4 tables.

ASSOCIATION: Výzkumný ústav syntetických pryskyřic a laků, Pardubice
(Research Institute of Synthetic Resins and Lacquers, Pardubice)

SUBMITTED: November 30, 1961

ZVONAR, Vladimir

Accelerant as optical indicator of the copolymerization of unsaturated polyester resins. Chem prum 12 no.2:106-109 F '62.

1. Vyzkumny ustav syntetickych pryskyric a laku, Pardubice.

ZVONAR, Vladimir

Scientific conference on designing engineering constructions from glass laminates. Chem prum 12 no.9:525-526 S '62.

1. Vyzkumny ustav syntetickych pryskyric a laku, Pardubice.

ZVONAR, Valdimir

New development trends in the Farbwerke Hoechst Factory. Chem prum 13 no.5:Supplement:Markromolekularni latky. 13 no.5:278-279 My '63.

1. Vyzkumny ustav syntetickych pryskyric a laku, Pardubice.

ACC NR: AP6009205 SOURCE CODE: GE/0004/65/012/011/0660/0663

AUTHOR: Zvonar, V. (Graduate engineer) (Cz) 39 B

ORG: Research Institute for Synthetic Resins and Varnishes, headed by Ordelt, Z. (Graduate engineer; Candidate of Sciences), Pardubice, Czechoslovakia

TITLE: Water absorption of glass-reinforced laminates and effect of water on their elasticity modulus

SOURCE: Plaste und Kautchuk, v. 12, no. 11, 1965, 660-663

TOPIC TAGS: laminated material, polyester plastic, elasticity, porosity

ABSTRACT: The rate of liquid penetration into laminated mattrials reinforced by glass fiber has been studied, and the relationship between the elasticity modulus and the liquid content observed. The basic linear correlations between the E modulus and the liquid content were established for various temperatures. The relationships derived are valid for the state of equilibrium. Liquids used in the course of the experiment were: water, methanol, water with an emulsifier, glycerin, gasoline and mineral oil. Test laminates included the eight-layer, heat-treated plastic Y Plast 35, and the unsaturated polyester resin CHS-Polyester 104. The experiment has shown a relationship between the porosity, (regulated by the glass-reinforcement content and the surface treatment), liquid-absorbtion capacity, and elasticity modulus in the laminates. Orig. art. has: 7 figures, 2 tables, and 11 formulas.

Card 1/2

[KP]

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

L 36272-66

ACC NR: AP6009285

SUB CODE: 11/ SUBM DATE: 17Aug64/ ORIG REF: 008/ OTH REF: 003/ SOV REF: 002

Card 2/2

CZECHOSLOVAKIA

ZVONAR, V

Research Institute of Synthetic Resins and Lacquers, Pardubice

Prague, Collection of Czechoslovak Chemical Communications, No 1 January 1967, pp 280-287

"Velocity of flow of liquid in capillaries."

ZVONAR, Vladimir; ZAHRADNIKOVA, Anna

Simple method for determining contact angles. Chem prum 15 no.4: 242-244 Ap '65.

1. Research Institute of Synthetic Resins and Lacquers, Pardubice.
Submitted December 17, 1964.

ZVONAREV, A. (g. Borovichi, Novgorodskoy oblasti); RAST, S., instruktor

Answers to activists' questions. Sov. profsoiuzy 18 no.11:27 Je '62.
(MIRA 15:6)

1. Gruzinskiy respublikanskiy sovet professional'nykh soyuzov, g. Tbilisi.

(Trade unions)

ZVONAREV, A.; KASPARYAN, A.

Be sensitive to efficiency suggestions. Fin.SSSR 17 no.8:67 Ag '56.
(MIRA 10:12)

(Finance)

21,1800, 21,5300

SOV/120-59-5-28/46

AUTHORS: Gus'kov, Yu.K. and Zvonarev, A.V.

TITLE: A Thermocouple System for the Measurement of Large Neutron Fluxes

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 5, pp 121 - 122 (USSR)

ABSTRACT: In nuclear-reactor experiments, it is useful to have a simple neutron detector which may be used to measure, rapidly and in a wide range, neutron fluxes in the presence of large γ-ray background. A simple thermocouple system is described in the present paper and is shown in Figure 1. The detector consists of two thermocouples made up of chromel and copper-nickel (56% Cu, 43% Ni) junctions. The detector is shown schematically in Figure 1, in which 1 is an aluminium frame, 2 is an aluminium disc which centres the detector in the reactor channel, 3 is an insulator, 4 are the free ends of the thermocouples, 6 is a steeltube with U_3O_8 enriched (75%) with U^{235}, 7 is a steel tube filled with Pb_3O_4, 8 is the common end of the thermocouples (the Cu-Ni alloy).

A Thermocouple System for the Measurement of Large Neutron Fluxes

The amount of U_3O_8 and Pb_3O_4 in the two tubes is about the same. Figure 2 shows the calibration curve for the detector in which the neutron flux is plotted horizontally and the output of the thermocouple in mV, vertically. As can be seen from Figure 1, the thermocouples are connected in opposition so that the e.m.f. measured across the free chromel ends is equal to the difference in the thermal e.m.f. of the two thermocouples. The measured thermal e.m.f. difference is a measure of the heating due to the fission of U^{235}. The heating of the thermocouple due to the housing medium and γ-rays is automatically compensated. The instrument has been tested in an experimental cooled channel of an atomic power station, using fluxes between 5×10^9 and 1.5×10^{13} neutron/cm^2 sec. One of the disadvantages of the instrument is that it is not linear for large neutron fluxes. The settling time of the system is about 5 - 10 min.

4

66375

SOV/120-59-5-28/46

A Thermocouple System for the Measurement of Large Neutron Fluxes

There are 2 figures and 4 references, 1 of which is Soviet, 1 Swedish and 2 English.

SUBMITTED: September 4, 1958

4

Card 3/3

24(0) 21(4) SOV/89-7-2-13/24

AUTHORS: Gus'kov, Yu. K., Zvonarev, A. V.

TITLE: Measuring the Electrical Resistivity of Boiling Nitrogen Under Irradiation in a Reactor (Izmereniye elektricheskogo soprotivleniya kipyashchego azota pri obluchenii yego v reaktore)

PERIODICAL: Atomnaya energiya, 1959, Vol 7, Nr 2, pp 165 - 166 (USSR)

ABSTRACT: The measuring instrument consists of a Dewar flask with two 2.4 cm^2 copper plates (there is an outline sketch) to which wires of the BPTE wire are soldered. The metallic shielding of the cable reaches to the electrodes up to 10 mm. The electrodes are 5 mm apart. The Dewar flask is filled with 118 g of liquid nitrogen. The resistance was measured with the TO-1 instrument (measuring range 10^6 to $10^{12}\ \Omega$). The resistance between the two BPTE cables at a neutron flux of $1.5.10^{13} n/cm^2.sec$ is more than $10^{10}\ \Omega/m$. The electrical resistance of liquid nitrogen was $\sim 10^{12}\ \Omega/cm^3$ at a neutron flux of $10^{11}/cm^2.sec$ and $4.10^9\ \Omega/cm^3$ at a flux of $1.5.10^{13}\ n/cm^3.sec$. When sufficient liquid evapo-

Card 1/2

rated to leave the electrodes free the resistance decreased to $7.10^7 \Omega/cm^3$. During irradiation in the reactor the nitrogen boiled very strongly and the evaporation time decreased by one order of magnitude. A. K. Krasin, Doctor of Physical-mathematical Sciences, took an interest in this work. A. G. Vishnyak cooperated in the experiments. There is 1 figure.

SUBMITTED: April 18, 1959

21.3000

69094

S/120/60/000/01/047/051
E032/E314

AUTHORS: Gus'kov, Yu.K., Zvonarev, K.V. and Klychkova, V.P.

TITLE: Preparation of Uranium Layers by Evaporation in Vacuo

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, Nr 1, pp 143 - 144 (USSR)

ABSTRACT: In nuclear physics it is frequently necessary to use specimens having a uranium layer deposited on them. The present authors have developed an evaporator which will work for 50 hours and can produce layers of U_3O_8 30 - 40 μ thick in a single evaporation. Various types of evaporators were tried, most of which did not have a sufficiently long working life. The most successful was that shown schematically in Figure 1. The evaporator consists of two concentric and cylindrical tungsten spirals made of a wire 1 mm in diameter. The spirals end in a cone, as shown and are surrounded by a tantalum screen (3). 4 - 5 g of U_3O_8 could be placed in the evaporator and the rate of evaporation was 10 g/h. The corresponding rate of growth of the U_3O_8 layer was

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4

Preparation of Uranium Layers by Evaporation in Vacuo

1 - 1.5 mg/min. The power required was about 1 kW. The evaporation was carried out in a vacuum of 10^{-4} to 10^{-5} mm Hg and provision was made for replacing the U_3O_8 in the spiral without opening up the vacuum chamber. In this way 50 - 80 μ thick layers of U_3O_8 could be obtained without difficulty. The uniformity of the deposit was controlled by measuring the β-activity at various points on the specimen (Damodaran, Ref 1). In Figure 1 the notation is as follows: 1) tungsten plate, 5 mm thick; 2) lower screening plate made of tantalum, 0.1 mm thick; 3) tantalum screen, 0.1 mm thick; 4) outer tungsten spiral; 5) tantalum support for the outer spiral, 01 mm thick; 6) inner tungsten spiral; 7) tantalum cover 0.5 mm thick supporting the inner spiral; 8) nickel screen, 0.5 mm thick; 9) mica; 10) porcelain tube; 11) nickel disc, 5 mm thick and containing an insert for the specimen; 12) tungsten nut; 13) tungsten rod.

Card2/3

4

69094

S/120/60/000/01/047/051
E/032/E314

Preparation of Uranium Layers by Evaporation in Vacuo

This is an abridged translation.
There are 1 figure and 4 references, 3 of which are Soviet and 1 is English.

SUBMITTED: December 27, 1958

Card 3/3

4

21.1000,24.6820

77227
SOV/89-8-1-21/29

AUTHORS: Gus'kov, Yu. K., Zvonarev, A. V., Klychkova, V. P.

TITLE: A Study of Electromotive Forces Generated in Semiconductor Systems Containing Uranium, When Irradiated in Reactors. Letter to the Editor

PERIODICAL: Atomnaya energiya, 1960, Vol 8, Nr 1, pp 72-75 (USSR)

ABSTRACT: It is known on the basis of light, X-ray, γ-ray, β- and α-particle irradiation of hole-electron semiconductor systems that an electromotive force can be generated. The authors investigated the effects of fission particles originating in one member of the system chosen to be a uranium semiconductor compound. One had to be careful to choose a material which will not change appreciably its electrical properties. Semiconductors with a large number of original lattice defects satisfy such a requirement, and, having the choice between the polycrystalline semiconductors and monocrystals with appreciable amount of impurities, the authors preferred the polycrystalline oxide

semiconductors. In all experiments U_3O_8 served as the hole semiconductor with a high work function, and for low work function electron semiconductor the authors utilized BaO, TiO_2, MgO, and Al_2O_3. Gold and cooper were electrodes for U_3O_8, magnesium, and titan for the electron semiconductor. U_3O_8-BaO and U_3O_8-TiO_2 samples were obtained by thermal vacuum evaporation of semiconductor and electrode layers. In the case of U_3O_8-Al_2O_3, a layer of Al_2O_3 was sprayed on a titanium base, and then U_3O_8 was evaporated in vacuum, followed by gold or cooper. This did not work for MgO, so a ceramic layer of MgO, 0.5-mm thick was taken on which a magnesium electrode on one side, and U_3O_8 with gold or cooper on the other side was sprayed. Working surfaces were 6

and 2.8 cm^2, and thickness of U_3O_8, BaO, TiO_2 was 5 to 20 μ and that of A_2O_3 was 100 to 200 μ. Samples were held between bronze holders, with cooper-constantan thermocouple on one of them for temperature determination. Finally, the whole combination was enclosed in aluminum containers and irradiated in the experimentally cooled channel of the atomic reactor, with a density of neutrons and γ-rays between 10^{10} to 10^{13} $cm^{-2} \cdot sec^{-1}$ (depending on its power level). Sample temperature was approximately 120° C. The authors investigated the emf V_{∞}, short-circuit current I_{sc}, load characteristic, surface temperature of the samples, and their resistance R at a potential difference of 1.4 v direct and in reverse. Volt-ampere characteristics were taken before and after exposure. All samples showed presence of an emf. Figure 1 represents the case of U_3O_8-MgO.

A Study of Electromotive Forces Generated in Semiconductor Systems Containing Uranium, When Irradiated in Reactors. Letter to the Editor

77227
SOV/89-8-1-21/29

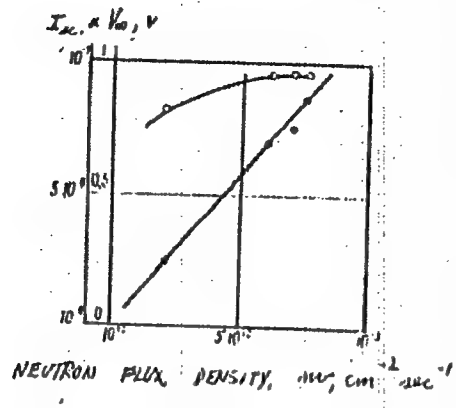

Fig. 1. Emf V_{oo} (o) and current I_{cs} (•) vs neutron flux density nv for an U_3O_8-MgO sample.

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On Fig. 2 is shown the load characteristic, similar to that of a valve photoelement. Neutron flux density was equal to $8 \cdot 10^{12}$ $cm^{-2} \cdot sec^{-1}$. Figure 3 represents typical volt-ampere characteristics of an U_3O_8-Al_2O_3 sample, before and after exposure. A small valve effect is observable after exposure; during irradiation the rectifying coefficient at 1.4 v was between 2 and 10. Figure 4 shows large variations of all characteristics. Special experiments were performed to check the role of the uranium fission fragments in the emf generation process. Same samples irradiated with γ-rays showed three times weaker effect than in the case of neutron irradiation. This compares favorable with the relative ionization of γ-rays and neutrons. One double sample of U_3O_8-Al_2O_3 was prepared, utilizing on one side a uranium sample 10% enriched in U^{235} while on the other, natural U_3O_8 was used. The

A Study of Electromotive Forces Generated in Semiconductor Systems Containing Uranium, When Irradiated in Reactors. Letter to the Editor

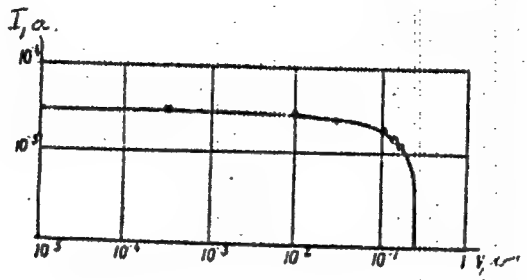

Fig. 2. Load characteristics of an U_3O_8-MgO sample.

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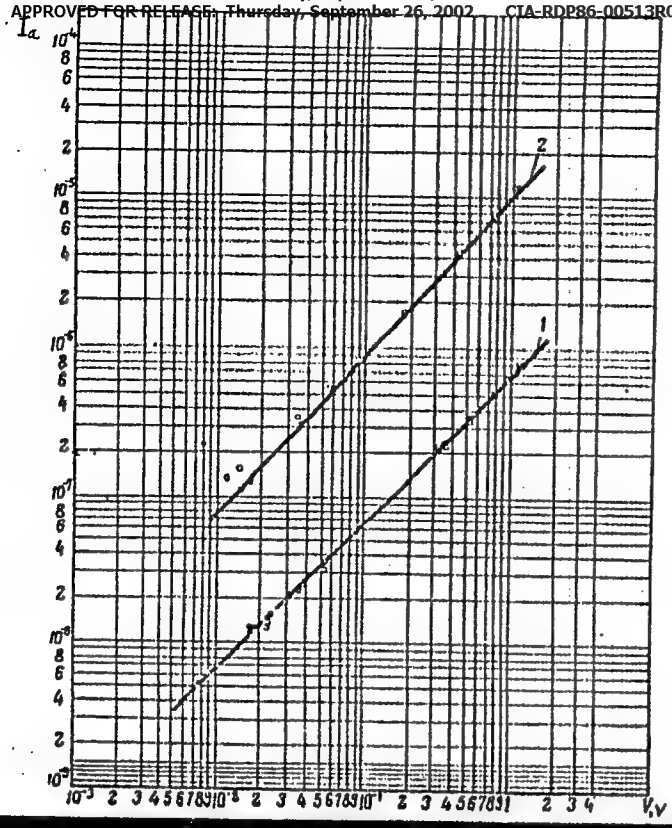

77227, SOV/89-8-1-21/29

Fig. 3. Volt-ampere characteristics of the U_3O_8-Al_2O_3 sample before (curve 1) and after (curve 2) exposure in reactor: •, negative potential on the titanium electrode; o, positive potential on the titanium electrode.

Card 7/10

ZVOLINSKIY, V. P.

Conference devoted to the discussion of the concept of electronegativity. Zhur. VKHO 8 no.2:223-224 '63.
(MIRA 16:4)

(Chemical affinity—Congresses)

ZVOLINSKIY, V.P., nauchnyy sotrudnik

Lomonosov on petroleum. Nauka i zhizn' 30 no.6:15 Je '63.
(MIRA 16:7)

1. Institut istorii yestestvoznaniya i tekhniki AN SSSR.
(Petroleum geology)
(Lomonosov, Mikhail Vasil'evich, 1711-1765)

CAN MEN-KHUA [Kang Meng-hua]; GROMOV, K.Ya.; DZHELEPOV, B.S.;
ZVOL'SKA, V.; ZVOISKIY, I.

Conversion electrons from Tu^{165}. Izv. AN SSSR. Ser. fiz. 25 no.9:1092-1095 '61. (MIRA 14:8)
(Thulium---Isotopes)
(Internal conversion(Nuclear physics))

GRIGOR'YEV, Ye.P.; GROMOV, K.Ya.; DZHELEPOV, B.S.; ZHELEV, Zh.T.; ZVOL'SKA, V.; ZVOL'SKIY, I.

Decay of $Yb^{166} \rightarrow Tu^{166} \rightarrow Er^{166}$. Izv AN SSSR.Ser.fiz. 25 no.10:1217-1227 O '61. (MIRA 14:10)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova, Ob"yedinennyy institut yadernykh issledovaniy.

(Ytterbium—Decay) (Thulium—Decay) (Erbium—Decay)

3

S/020/61/136/002/014/034
B019/B056

AUTHORS: Grigor'yev, Ye. P., Gromov, K. Ya., Dzhelepov, B. S., Corresponding Member of the AS USSR, Zvol'ska, V., Zolotavin, A. V., Veys, M., and Van Yun-yuy

TITLE: The Decay of the Two-hour Isotope Lu^{168}

PERIODICAL: Doklady Akademii nauk SSSR, 1961, Vol. 136, No. 2, pp. 325-328

TEXT: In the lutetium fraction forming in the course of an irradiation of tantalum with 660-Mev protons, conversion lines were discovered, which had a period of two hours. The authors investigated the lutetium isotope to which these lines belong. For this purpose they used a β-spectrometer with double focusing, the magnetic field was measured by means of proton resonance, and calibration was carried out according to exactly known lines. Recording was carried out by means of two Geiger-Müller counters. Three conversion lines with a period of (2.15 ± 0.20) hours were discovered; closer details are given in Table 1. By comparing the energy differences between these three lines with X-ray data, it was found that the Lu-isotope goes over into an ytterbium isotope. From the close study

The Decay of the Two-hour Isotope Lu^{168}

S/020/61/136/002/014/034
B019/B056

of the known Lu-isotopes, of their decays, and their spectra, the authors come to the conclusion that the required isotope with a period of 2.15 hours must be $_{71}Lu^{168}$, which has an odd-odd deformed nucleus. Fig. 3 shows the decay scheme of this isotope. There are 3 figures, 3 tables, and 5 references: 4 Soviet and 1 US.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova (Leningrad State University imeni A. A. Zhdanov)
Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: October 6, 1960

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S/048/62/026/001/012/018
B125/B102

AUTHORS: Grigor'yev, Ye. P., Dzhelepov, B. S., Zvol'ska, V., Zolotavin, A. V., Malysheva, T. V., Khotin, B. A., and Adam, I.

TITLE: Conversion electrons of the short-lived platinum and tungsten isotopes

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 1, 1962, 120 - 124

TEXT: The conversion electron spectra of the platinum and the tungsten fractions were measured by a β-spectrometer with double focusing by the method of nuclear resonance in the intervals 68 - 106 kev, and 70 - 90 kev, respectively. The neutron-deficient platinum and tungsten isotopes were produced by bombarding gold with 660-Mev protons. Table 1 gives the parameters of the 16 lines obtained for the platinum fraction. 7 of these lines have been newly discovered. The 106.43-kev transition cannot be attributed to one of the Pt isotopes but only to an Ir isotope. The intensity ratio of the lines L_{II} and L_{III} suggests an E2 or E3-type transition. Also for the 110.10-kev transition in an iridium nucleus

Card 1/3

Conversion electrons of the...

the isotope on whose decay transition takes place cannot be determined due to its insufficiently accurate half line. The L_I, L_{II}, L_{III} lines with the energies 96.71, 97.25 and 98.87 kev of the 110.10-kev transition have a half life of (20±0.3) hr. The ratio of the line intensities of inner conversion on the L-subshells suggests a transition of type E1 or E2+M1. Also the 93.94-kev transition mentioned in 1960 at the X Soveshchaniye po yadernoy spektroskopii (Tenth Congress on Nuclear Spectroscopy) in Moscow takes place in an iridium nucleus. The three conversion lines with the half life (2.6±0.6) hr and the energies 72.4, 74.3, and 83.2 kev which the authors studied in the 70 - 90-kev spectral range belong to the decay of W^{176} or W^{177}. The first two lines are M- and N-lines of the 74.9-kev transition in Ta. The intensities of the (L_I+L_{II}), L_{III}, M, and N conversion lines of the well-known transition with $h\upsilon$ = 88.35 kev ($2^+ \rightarrow 0^+$) in Hf^{176} initially increase with the half life (2.5±0.4) hr and then decrease with the half life 8 hr of Ta^{176}. The half life 2.5 hr of W^{176} obtained by the author differs essentially from the value obtained by G. Wilkinson. There are 2 figures, 7 tables,

Card 2/3

and 3 references: 2 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: G. Wilkinson, Phys. Rev., 80, 495 (1950).

ASSOCIATION: Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo gos. universiteta im. A. A. Zhdanova (Scientific Research Institute of Physics of Leningrad State University imeni A. A. Zhdanova). Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research). Institut geokhimii i analiticheskoy khimii im. V. I. Vernadskogo (Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy)

Table 1. Energies and half lives of the intensity decrease of some conversion lines of the platinum fraction.
Legend: (1) $T_{1/2}$(hr); (2) identification; (3) isotope.

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S/048/62/026/008/009/028
B104/B102

24.6300

AUTHORS: Gromov, K. Ya., Dzhelepov, B. S., Zvol'ska, V., Zvol'skiy, I., Lebedev, N. A., and Urbanets, Ya.

TITLE: The Tu^{167} decay scheme

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 8, 1962, 1019 - 1026

TEXT: To improve the decay scheme of Tu^{167}, the γ-spectrum was studied with a single-crystal scintillation spectrometer having a 100-channel pulse-height analyzer, and the spectrum of the conversion electrons of Tu^{167} with a double focusing β-spectrometer. The latter had a device for measuring the electric field by the proton resonance method for electron energies >56 kev; whereas for E_e <56 kev the magnetic field was measured with a probe. The Tu preparation was separated chromatographically from Ta which had been irradiated with 660-Mev protons. The results (Tables 1 and 2) deviate considerably from those of other authors and are considered to be the most accurate. After thoroughly studying the multiplicity of

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B104/B102

The Tu^{167} decay scheme

transitions in the Er^{167} nucleus, the decay scheme was plotted as in Fig. 5. There are 5 figures and 5 tables.

Table 1. Relative intensities of Tu^{167} γ-rays.

(1) E_γ, кэв	(2)	(3)	(4)
207,9	100	100	100
531,8	3,0±0,5	3,2±0,5	5,6
700	<0,15	(~0,8)	
790	<0,15	2,3±1	
880	<0,1	~1,1	

Legend: (1) E_γ, kev, (2) results, (3) K. Gromov, et al., Materialy III. Soveshchaniya po yadernoy spektroskopii. Preprint no. 613, Dubna, 1960, (4) H. Narasimhaian, M. L. Pool, Nucl. Phys., 21, 340 (1960).

GROMOV, K.Ya.; ZHELEV, Zh.T.; ZVOL'SKA, V.; KALINNIKOV, V.G.

Decay of Er^{161}. IAd. fiz. 2 no.5:783-793 N '65.

(MIRA 18:12)

1. Ob"yedinennyy institut yadernykh issledovaniy. 2. Sotrudnitsa Prazhskogo Instituta yadernykh issledovaniy, Chekhoslovakiya (for Zvol'ska).

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R0020657100017-2

ACC NR: AP6016896 SOURCE CODE: UR/0367/65/002/005/0783/0793

AUTHOR: Gromov, K. Ya.; Zhelev, Zh. T.; Zvol'ska, V.; Zvolska, V.; Kalinnikov, V. G.

ORG: Joint Institute of Nuclear Research (Ob"yedinennyy institut yadernykh issledovaniy); Zvol'ska/ Prague Institute of Nuclear Research (Prazhskiy institut yadernykh issledovaniy)

TITLE: Decay of Er sup 161

SOURCE: Yadernaya fizika, v. 2, no. 5, 1965, 783-793

33
B

TOPIC TAGS: radioactive decay, positron, erbium, holmium, spectrometer, electron spectrum

ABSTRACT: Positron radiation of Er^{161} (E_0 = 620 ± 40 keV) was observed with a triple-focusing magnetic spectrometer. Data are presented for the conversion electron spectrum and the multipolarity of certain transitions in the Ho^{161} nucleus. The $Er^{161} \longrightarrow Ho^{161}$ decay-scheme is determined and presented. The 1697 and 1943 keV levels are interpreted as three-quasi-particle states. The authors express deep thanks to A. V. Kudrymvtsevaya for the help on the work and to N. I. Pyatov and V. M. Mikhaylov for checking the decay-scheme. Orig. art. has: 5 figures and 2 tables. [JPRS]

SUB CODE: 20 / SUBM DATE: 09Apr65 / ORIG REF: 011 / OTH REF: 010

SOV REF: 012

Card 1/1 BLG

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2

S/048/63/027/002/005/023
B104/B186

AUTHORS: Grinev, K. Ya., Batsepov, P. S., Zvol'skaya, V., Zvol'skiy, I., Gustavson, A. V., Peleksis, L. L., and Peleksis, E. K.

TITLE: The Tu^{165} decay scheme

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 27, no. 2, 1963, 195-199

TEXT: The decay scheme of Tu^{165} suggested in a previous work by the authors (Izv. AN SSSR, Ser. fiz., 25, 1032 (1961)) was checked by $\gamma\gamma$-coincidence tests and by determining the multipole orders in the Er^{165} transitions. The spectrum of the conversion electrons was taken with a double focusing β-spectrometer in the range 5-80 kev. From the intensity ratios the multipole order for most transitions with energies of a few kev could be determined. The $\gamma\gamma$-coincidences were determined. [illegible] The [illegible] shown in the figure was constructed from the results. It is to be noted that if the positions

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2

The Tu^{165} decay scheme

S/048/63/027/002/005/023
B104/B130

paper. There are 1 figure and 3 tables.

Fig. Tu^{165} decay scheme.
Legend: (1) 29 hours; (2) 10 hours.

GROMOV, K.Ya.; DZHELEPOV, B.S.; ZVOL'SKA, V.; ZVOL'SKIY, I.; KALINNIKOV, V.G.

Decay of Tu^{163}. Izv.AN SSSR.Ser.fiz. 27 no.2:182-194 F '63. (MIRA 16:2)

(Thulium isotopes--Decay)

GROMOV, K.Ya.; DZHELEPOV, B.S.; ZVOL'SKA, V.; ZVOL'SKIY, I.; LEBEDEV, N.A.; URBANETS, Ya.

Decay scheme of Tu^{167}. Izv. AN SSSR. Ser. fiz. 26 no.8: 1019-1026 Ag '62. (MIRA 15:11)

(Thulium--Decay)

GRIGOR'YEV, Ye.P.; DZHELEPOV, B.S.; ZVOL'SKA, V.; ZOLOTAVIN, A.V.; MALYSHEVA, T.V.; KHOTIN, B.A.; ADAM, I.

Conversion electrons from short-lived platinum and tungsten isotopes. Izv. AN SSSR. Ser. fiz. 26 no.1:120-124 Ja '62. (MIRA 15:2)

1. Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo gosudarstvennogo universiteta im. A.A.Zhdanova, Ob"yedinennyy institut yadernykh issledovaniy i Institut geokhimii i analiticheskoy khimii im. V.I.Vernadskogo.
(Electrons)
(Platinum—Isotopes)
(Tungsten—Isotopes)

Abs Jour : Ref Zhur - Biol., No 14, 1958, No 65594

Author : Pachnarova Eva, Brutar Vlastimil, Zvolska Eva
Inst : -
Title : The Possibility of Augmenting Lactation.

Orig Pub : Lekar. listy, 1954, 9, No 1, 10-14

Abstract : No abstract

Card : 1/1

SOYKOVA-PACHNEROVA, Eva; BRUTAR, Vlastimil; ZVOLSKA, Eva

Possibility of increasing of milk secretion in lactation; 2nd communication. Cesk. gyn. 19 no.4:275-279 July 54.

1. Z I. por. klin., predn. prof. MUDr Karel Klaus.
(LACTATION, physiology
milk secretion increasing, results of exper.)

SOV/48-23-7-16/31

21(7)

AUTHORS: Bunakov, V. Ye., Dzhelepov, B. S., Zvol'skiy, I., Sergiyenko, V.A.

TITLE: The Coincidences of the Conversion Electrons in the Decay $Se^{75} \longrightarrow As^{75}$ (Sovpadeniya konversionnykh elektronov pri raspade $Se^{75} \longrightarrow As^{75}$)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 7, pp 859-863 (USSR)

ABSTRACT: The authors investigated, by means of a lens-β-spectrometer, the coincidences of the conversion electrons of the above-mentioned decay, the isotope S^{75} being obtained by a (n,γ)-reaction in the irradiation of the enriched isotope Se^{74}. The decay of Se^{75} was investigated in a number of papers; the lines of the γ-spectrum and the coincidences are indicated. The spectrum, recorded by the spectrometer, of the conversion electrons of this decay is shown in figure 1, and is supplemented by the level scheme. The observed coincidences of conversion electrons are indicated, and it is ascertained that their relative number lies between 0.5 and 3. The coincidences of various lines recorded by the spectrometer are shown in

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several diagrams, and the results are discussed in detail. Finally, it is stated that the results obtained improve the data of previous papers (Refs 3-5). The authors thank A. V. Zolotavin for placing at their disposal the isotope Se^{75}, and mention L. Gorzhak, student of the LGU, who participated in the measurements. There are 5 figures, 1 table, and 6 references, 3 of which are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo gos. universiteta im. A. A. Zhdanova (Scientific Research Institute of Physics of the Leningrad State University imeni A. A. Zhdanov)

GAN MEN-KHUA [Kang Meng-hua]; GROMOV, K.Ya.; DZHELEPOV, B.S.; ZVOL'SKA, V.; ZVOLSKIY, I.

Conversion electrons from Tu^{165}. Izv. AN SSSR. Ser. fiz. 25 no.9:1092-1095 '61. (MIRA 14:8)
(Thulium--Isotopes)
(Internal conversion(Nuclear physics))

GRIGOR'YEV, Ye.P.; GROMOV, K.Ya.; DZHELEPOV, B.S.; ZHELEV, Zh.T.; ZVOL'SKA, V.; ZVOL'SKIY, I.

Decay of $Yb^{166} \rightarrow Tu^{166} \rightarrow Er^{166}$. Izv AN SSSR.Ser.fiz. 25 no.10:1217-1227 O '61. (MIRA 14:10)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova, Ob"yedinennyy institut yadernykh issledovaniy.

(Ytterbium—Decay) (Thulium—Decay) (Erbium—Decay)

DZHELEPOV, B.S.; ZVOL'SKIY, I.; NIKITIN, M.K.; SERGIYENKO, V.A.

Coincidences between conversion electrons of the dysprosium fraction. Izv.AN SSSR.Ser.fiz. 25 no.10:1246-1255 O '61. (MIRA 14:10)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova i Ob"yedinennyy institut yadernykh issledovaniy.
(Electrons—Spectra) (Dysprosium—Decay)

DZHELEPOV, B.S.; ZVOLINSKIY, I.; SERGIYENKO, V.A.

Coincidences between conversion electrons produced in the decay of $Ho^{160} \rightarrow Dy^{160}$. Izv.AN SSSR.Ser.fiz. 25 no.10:1228-1245 O '61. (MIRA 14:10)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova, Ob"yedinennyy institut yadernykh issledovaniy.
(Holmium--Decay) (Dysprosium--Decay)

S/048/62/026/002/005/032
B101/B102

AUTHORS: Dzhelepov, B. S., Zvol'skiy, I., Nikitin, M. K., and Sergiyenko, V. A.

TITLE: Coincidences between conversion electrons resulting from the Dy^{153} — Tb^{153} decay

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 2, 1962, 202-204

TEXT: The coincidences between conversion electrons of the transitions of 80.84 + 82.48; 99.7, and 147.5 + 149.0 kev with Dy^{153} electrons of 170-230 and 173.6 kev were studied (Figs. 1, 2). The Dy fraction was chromatographically separated from a tantalum target bombarded with 660-Mev protons. The sources contained Dy^{153} ($T_{1/2}$ = 6.4 hrs); Dy^{155} (10 hrs); Dy^{157} (8 hrs); Dy^{159} (144 days); Tb^{153} (2.3 days); and Tb^{155} (5 days). As the measurements with a double-lens beta-ray spectrometer began 18 hrs after the irradiation of the Ta target and took about 15 hrs, the short-lived Dy isotopes with A < 153 had already decayed. The Dy

Coincidences between conversion...

preparation was precipitated onto a slightly aluminized collodion film. It is concluded from the experimental data that the 80.8-, 163.3-, and 253.3-kev levels excited in the Dy^{153} decay do exist in Tb^{153}.
Ye. N. Rozhin, K. Ya. Gromov, and V. A. Khalkin are thanked for assistance.
There are 3 figures, 1 table, and 5 Soviet references.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research). Leningradskiy gos. universitet im. A. A. Zhdanova (Leningrad State University imeni A. A. Zhdanov)

Fig. 1. Coincidences of L80.84 Dy^{153} + L82.48 Dy^{153} + L83.01 Dy^{157} electrons. Broken line: spectrum of conversion electrons, recorded by one half of the spectrometer. Continuous line: count rate of coincidences.

Legend: abscissa: Hρ, oe·cm. Ordinate: left: $N_{single} \cdot 10^{-3} \cdot min^{-1}$; right: $N_{coinc} \cdot 10^{-2}\ hr^{-1}$.

Coincidences between conversion...

Fig. 2a. $N_{sinlge} \cdot 10^{-4}$ min^{-1} as a function of Hρ.

Fig. 2b. spectrum of conversion electrons. Diagram (a): coincidences of K99.7 electrons of Dy^{153}; diagram (б): coincidences of L80.84 + L82.48 electrons of Dy^{153} + L83.01 electrons of Dy^{157}; diagram (в): coincidences of K147.5 + K149.0 + L99.7 electrons of Dy^{153}.

Legend: abscissa: Hρ, oe·cm; ordinate of diagrams (a), (б), and (в): $N_{coino} \cdot hr^{-1}$.

Card 3/4

40098
S/048/62/026/008/009/028
B104/B102

24.6300

AUTHORS: Gromov, K. Ya., Dzhelepov, B. S., Zvol'ska, V., Zvol'skiy, I., Lebedev, N. A., and Urbanets, Ya.

TITLE: The Tu^{167} decay scheme

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 8, 1962, 1019 - 1026

TEXT: To improve the decay scheme of Tu^{167}, the γ-spectrum was studied with a single-crystal scintillation spectrometer having a 100-channel pulse-height analyzer, and the spectrum of the conversion electrons of Tu^{167} with a double focusing β-spectrometer. The latter had a device for measuring the electric field by the proton resonance method for electron energies >56 kev; whereas for E_e <56 kev the magnetic field was measured with a probe. The Tu preparation was separated chromatographically from Ta which had been irradiated with 660-Mev protons. The results (Tables 1 and 2) deviate considerably from those of other authors and are considered to be the most accurate. After thoroughly studying the multiplicity of

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S/048/62/026/008/009/028
B104/B102

The Tu^{167} decay scheme

transitions in the Er^{167} nucleus, the decay scheme was plotted as in Fig. 5. There are 5 figures and 5 tables.

Table 1. Relative intensities of Tu^{167} γ-rays.
Legend: (1) E_γ, kev, (2) results, (3) K. Gromov, et al., Materialy III. Soveshchaniya po yadernoy spektroskopii. Preprint no. 613, Dubna, 1960, (4) H. Narasimhaian, M. L. Pool, Nucl. Phys., 21, 340 (1960).

(1) E_γ, кэв	(2)	(3)	(4)
207,9	240±35 100	100	165 100
531,8	3,6±0,5	3,2±0,5	5,6
700	≤0,15	(~0,8)	—
790	≤0,15	2,3±1	—
880	≤0,1	~1,1	—

GROMOV, K.Ya.; YENCHEV, D.A.; ZHELEV, Zh.T.; ZVOL'SKIY, I.; KALINNIKOV, V.G.; KUZNETSOV, V.V.; MA KHO IK; MUZIOL', G.; KHAN' SHU-ZHUN' [Han Shu-jun]

Decay scheme of Tb^{152}. IAd. fiz. 1 no.4:562-572 Ap '65. (MIRA 18:5)

1. Ob"yedinennyy institut yadernykh issledovaniy.

GROMOV, K.Ya.; DZHELEPOV, B.S.; ZVOL'SKA, V.; ZVOL'SKIY, I.; KALINNIKOV, V.G.

Decay of Tu^{163}. Izv.AN SSSR.Ser.fiz. 27 no.2:182-194 F '63. (MIRA 16:2)

(Thulium isotopes--Decay)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2

S/048/63/027/002/009/021
B104/B186

AUTHORS: [illegible]

TITLE: The ^{165}[illegible] decay scheme

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 27, no. 2, 1963, 195-197

TEXT: The decay scheme of ^{165}[illegible] suggested in a previous work by the authors [Izv. AN SSSR, Ser. fiz., 25, 1961] was checked by $\gamma\gamma$-coincidence tests and by determining the multipole orders in the ^{165}Er transitions. The spectrum of the conversion electrons was taken with a double focusing β-spectrometer in the range 5-50 kev. From the [illegible] the multipole orders of the transitions were determined [illegible] Card 1/3

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2

S/048/63/027/002/005/013
B104/B180

The Tu^{165} decay scheme

paper. There are 1 figure and 3 tables.

Fig. Tu^{165} decay scheme.
Legend: (1) 70 hours; (2) 11 hours.

Card 2/3

GROMOV, K.Ya.; DZHELEPOV, B.S.; ZVOL'SKA, V.; ZVOL'SKIY, I.; LEBEDEV, N.A.; URBANETS, Ya.

Decay scheme of Tu^{167}. Izv. AN SSSR. Ser. fiz. 26 no.8: 1019-1026 Ag '62. (MIRA 15:11)

(Thulium--Decay)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

1. ZVOM SKEW

2. USSR (600)

4. Briquets (Fuel)

7. Briquetting lumber waste. Za ekon. mat. no. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, May 1953. Unclassified.

ZVOL'SKIY, P.I.

Results of the revision of plans and estimates in the Perm Economic Region. Prom.stroi. 37 no.10:7-10 O '59. (MIRA 13:2)

1. Leningradskiy Promstroyproyekt.
(Perm Province--Construction industry--Costs)

ZVOL'SKIY, S. T.

ZVOL'SKIY, S. T.: "Determination of the relative content of isotopes in bicomponential low-activity mixtures using the beta-ray absorption method." Kiev State Pedagogical Inst imeni A. M. Gor'kiy. Kiev, 1956.
(Dissertation for the Degree of Candidate in Physicomathematical Sciences.)

SO: Knizhnaya Letopis', No. 26, 1956

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

ZVOL'SKIY, S.T. [Zvol's'kyi, S.T.]

All-Union Conference on Peaceful Use of Atomic Energy. Geol. zhur. 18 no.1:109-110 '58. (MIRA 11:5)
(Atomic power--Congresses)

BABINETS, A.Ye. [Babynets', A.IE.]; ZVOL'SKIY, S.T. [Zvol'skyi, A.IE.]

Determination of the moisture content and compactness of soils by means of radioactive isotopes. Geol.zhur. 18 no.5:12-22 '58. (MIRA 12:1)

(Soils--Analysis) (Radioisotopes)

ZVOL'SKIY, S. [Zvol's'kyi, S.], kand.fiziko-matem.nauk; LYAL'KO, V., inzh.-geolog

The rays that look into the depths. Znan. ta pratsia no.5:6-7 My '60.
(Prospecting--Geophysical methods)

BABINETS, A.Ye. [Babynets', A.IE.]; ZVOL'SKIY, S.T. [Zvol's'kyi, S.T.]

Results of the utilization of trace neutrons and gamma rays in the study of soil moisture and density. Geol. zhur. 20 no. 4:45-53 '60. (MIRA 14:4)

(Soil physics) (Trace elements) (Gamma rays)

BABINETS, Audrey Yevtikhiyevich; ZVOL'SKIY, Stanislav Timofeyevich; BURKSER, Ye.S., otv.red.; SHTUL'MAN, I.F., red.izd-va; YEFIMOVA, M.I., tekhn.red.

[Investigation of the compactness and moisture content of soils by means of radioactivity] Issledovanie plotnosti i vlazhnosti gruntov metodami radioaktivnykh izluchenii. Kiev, Izd-vo Akad.nauk Ukrainskoi SSR, 1961. 139 p. (Akademiia nauk URSR, Kiev, Instytut geologichnykh nauk. Trudy. Seriia gidrogeologii i inzhenernoi geologii, no.6.). (MIRA 15:5)

1. Chlen-korrespondent AN USSR (for Burkser).
(Radioactivity) (Soil research)

ZVOLSKIY, S.T.

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PHASE I BOOK EXPLOITATION SOV/5592

Vsesoyuznoye soveshchaniye po vnedreniyu radioaktivnykh izotopov i yadernykh izlucheniy v narodnom khozyaystve SSSR. Riga, 1960.

Radioaktivnyye izotopy i yadernyye izlucheniya v narodnom khozyaystve SSSR; trudy Vsesoyuznogo soveshchaniya 12 - 16 aprelya 1960 g. g. Riga, v 4 tomakh. t. 4: Poiski, razvedka i razrabotka poleznykh iskopayemykh (Radioactive Isotopes and Nuclear Radiation in the National Economy of the USSR; Transactions on the Symposium Held in Riga, April 12 - 16, 1960, in 4 volumes. v. 4: Prospecting, Surveying, and Mining of Mineral Deposits) Moscow, Gostoptekhizdat, 1961. 284 p. 3,640 copies printed.

Sponsoring Agency: Gosudarstvennyy nauchno-tekhnicheskiy komitet Soveta Ministrov SSSR. Gosudarstvennyy komitet Soveta Ministrov SSSR po ispol'zovaniyu atomnoy energii

Eds. (Title page): N. A. Petrov, L. I. Petrenko, and P. S. Savitskiy; ed. of this volume: M. A. Speranskiy; Scientific ed.: M. A. Speranskiy; Executive Eds.: N. N. Kuz'mina and A. G. Ionel';

Card 1/11

Radioactive Isotopes and Nuclear (Cont.) SOV/5592

Tech. Ed.: A. S. Polosina.

PURPOSE : The book is intended for engineers and technicians dealing with the problems involved in the application of radioactive isotopes and nuclear radiation.

COVERAGE: This collection of 39 articles is Vol. 4 of the Transactions of the All-Union Conference of the Introduction of Radioactive Isotopes and Nuclear Reactions in the National Economy of the USSR. The Conference was called by the Gosudarstvennyy nauchno-tekhnicheskiy komitet Sovet Ministrov SSSR (State Scientific-Technical Committee of the Council of Ministers of the USSR), Academy of Sciences USSR, Gosplan SSSR (State Planning Committee of the Council of Ministers of the USSR), Gosudarstvennyy komitet Soveta Ministrov SSSR po avtomatizatsii i mashinostroyeniyu (State Committee of the Council of Ministers of the USSR for Automation and Machine Building), and the Council of Ministers of the Latvian SSR. The reports summarized in this publication deal with the advantages, prospects, and

Card 2/11

development of radioactive methods used in prospecting, surveying, and mining of ores. Individual reports present the results of the latest scientific research on the development and improvement of the theory, methodology, and technology of radiometric investigations. Application of radioactive methods in the field of engineering geology, hydrology, and the control of ore enrichment processes is analyzed. No personalities are mentiond. There are no references.

TABLE OF CONTENTS:

URBANEC, J.; KAJFOSZ, J.; ZVOLSKY, J.[Zvol'skiy, I.]; NOVGORODOV, A.

Investigation of $Dy^{155} \rightarrow Tb^{155}$ decomposition. Chekhosl fiz zhurnal 13 no.8:573-578 '63.

1. Laboratoriya yadernykh problem, Ob"yedinennyy institut yadernykh issledovaniy, Dubna, SSSR.

ZVOLSKY, Josef, dr.

New trends in oral hydiene. Prum potravin 13 no.4:189-190 Ap '62.

1. Severoceske tukove zavody, n.p., Usti nad Labem.

ZVOLSKY K.

J-11

CZECHOSLOVAKIA /Chemical Technology. Chemical Products and Their Application - Fats and oils. Waxes. Soap. Detergents; Flotation reagents

Abs Jour : Referat Zhur - Khimiya, No 2, 1958, 6078

Author : Zvolsky K., Redlich P.

Inst : Not given

Title : Chromatography in the Industry of Fats

Orig Pub : Prumysl potravin, 1955, 6, No 11, 559

Abstract : It is shown that it is possible to separate, by the chromatographic method, 7 pure fat acids (lauric, myristic, palmitic, stearic, butyric, linolenic and erucic).

Card 1/1

ZVOLSKY, P.; MALINA, L.

Mental factors in vitiligo. Cesk. psychiat. 59 no.4:222-228 Ag '63.

1. Psychiatricka klinika fakulty vseobecneho lekarstvi KU v Praze Dermatologicka klinika lekarske fakulty hygienicke KU v Praze.

(VITILIGO) (PSYCHOLOGY)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

ZVOLSKY, P.

The age factor in the outcome of therapeutic results in alcoholics.
Cesk. psychiat. 58 no.5:321-323 O '62.

1. Psychiatricka klinika fak. vseob. lek. University Karlovy v Praze.
(ALCOHOLISM) (AGING)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

ZVOLSKY, P.

Genetics in psychiatry. Cas. lek. cesk. 102 no.50:234-236 13 D'63.

1. Psychiatricka klinika fakulty vseobecneho lekarstvi KU v Praze; prednosta: prof. dr. V.Vondracek, DrSc.

CZECHOSLOVAKIA

ZVOLSKY, P., Psychiatric Clinic (Psychiatricka klinika), Faculty of General Medicine (Fakulta vseobecneho lekarstvi), Charles University, Prague, and MALINA, L., Dermatological Clinic (Dermatologicka klinika), Faculty of Medical Hygiene (Lekarska fakulta hygienicka), Charles University, Prague.

"Psychic Factors in Vitiligo"

Prague, Ceskoslovenska Psychiatrie, Vol LIX, No 4, August 63, pp 222-228.

Abstract [Authors' English summary]: Two groups of patients suffering from vitiligo were investigated from the view point of psychic factors in the origin and development of the disease. It was found that the random group, and more so the group with stressful factors linked to the onset of the disease, differed significantly from the control group. Authors argue against the view that psychic factors play a decisive role in the development of vitiligo. Fifteen references, including 1 Czech.

HASKOVEC, L.; ZVOLSKY, P.; FALTUS, F.

Neuroses in the general practice. (A group of neurotics from the center of district physicians and its comparison with a similar group from a psychiatric clinic). Cesk. psychiat. 61 no.5:314-330 O '65.

1. Psychiatricka klinika fakulty vseobecneho lekarstvi Karlovy University v Praze.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2

L 43006-65 SOURCE CODE: UR/0083/65/000/005/0314/0330

ACC NR: AP6031816

AUTHOR: Haskovec, L.--Gashkovets, L.; Zvolsky, P.--Zvol'skiy, P.; Faltus, F.--Fal'tus, F.

ORG: Psychiatric Clinic, Faculty of General Medicine, Charles University, Prague (Psychiatricka klinika fakulty vseobecneho lekarstvi KU)

TITLE: Neurosis in the outpatient offices of general practitioners

SOURCE: Ceskoslovenska psychiatrie, no. 5, 1965, 314-330

TOPIC TAGS: psychoneurotic disorder, clinical medicine, health, psychology, psychiatry

ABSTRACT: Detailed study of 103 outpatient neurotic patients from various general practitioners in Prague compared with clinic patients by a number of criteria. In general, the former were either very severe and chronic neurotics or very early and mild cases, the clinic cases being more homogeneous in this regard. In former patients, somatic and occupational problems predominated; in the clinic patients, affective and sexual or marital ones overshadowed everything else. Conclusions for practice and public health policy. Orig. art. has: 17 tables. [Based on authors' Eng. abst.] [JPRS: 33,500]

SUB CODE: 06 / SUBM DATE: none / ORIG REF: 004

Card 1/1 MLP

0919 0564

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

BIAN, Josef, inz. CSc.; ZVONAR, Ladislav, Inz.

Alloys for thermocouples used in the metallurgical industry.
Hut listy 19 no. 6:421-425 Je '64.

1. Research Institute of Metals, Panenske Brezany (for Bican).
2. Kovohuts Vestec National Enterprise (for Zvonar).

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

ZVONAR, V.

SOV/4982

International symposium on macromolecular chemistry, Moscow, 1960.

Mezhdunarodnyy simpozium po makromolekulyarnoy khimii SSSR, Moskva, 14-18 iyunya 1960 g.; doklady i avtoreferaty. Sektsiya I. (International Symposium on Macromolecular Chemistry Held in Moscow, June 14-18, 1960; Papers and Summaries. Section I.) [Moscow, Izd-vo AN SSSR, 1960] 346 p. 5,500 copies printed.

Sponsoring Agency: The International Union of Pure and Applied Chemistry, Commission on Macromolecular Chemistry

Tech. Ed.: T. V. Polyakova.

PURPOSE: This collection of articles is intended for chemists and researchers interested in macromolecular chemistry.

COVERAGE: This is Section I of a multivolume work containing scientific papers on macromolecular chemistry in Moscow. The material includes data on the synthesis and properties of polymers, and on the processes of polymerization, copolymerization, polycondensation, and polyrecombination. Each text is presented in full or summarized in French, English, and Russian. There are 47 papers, 28 of which were presented by Soviet, Rumanian, Hungarian, and Czechoslovakian scientists. No personalities are mentioned. References accompany individual articles.

Card 6/9

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ZVONAR, Vladimir

H

CZECHOSLOVAKIA/Chemical Technology. Chemical Products and Their Application, Part 4. - Varnishes, Paints, Paint Coatings.

Abs Jour: Referat. Zhurnal Khimiya, No 21, 1958, 72552.

Author : Vladimir Zvonar.
Inst :
Title : Colorimetric Determination of Cobalt in Siccatives.

Orig Pub: Chem. prumysl, 1957, 7, No 9, 512-514.

Abstract: A rapid and simplified method of quantitative determination of Co in siccatives is proposed: a sample containing from 0.4 to 4.0 mg of Co is boiled with 20 ml of dilute HCl until it decomposes (about 10 min.), after which it is diluted with acetone to 100 ml and colormetered with NH_4 using a calibration curve. The relative error of this determination is 1

Card : 1/2

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

H

CZECHOSLOVAKIA/Chemical Technology, Chemical Products and Their Application, Part 4. - Varnishes, Paints, Paint Coatings.

Abs Jour: Referat. Zhurnal Khimiya, No 21, 1958, 72552.

to 2% usually, but it reaches 5%, if the Co content was very great or very little, i.e., the error is of the same order as in the case of methods of Co determination requiring much time (combustion of the sample etc.). The content of Mn and some other metals in the siccative interferes with the determination accuracy; Fe should be preliminarily converted into pyrophosphate complex.

Card : 2/2

Distr: 4E2c(j)

Melt viscosities of low-molecular-weight polycondensates. Miloslav Bohdanecký, Jiří Tamchyna, and Vladimír Zvonař (Research Inst. Synthetic Resins & Varnishes, Pardubice, Czech.). *Chem. průmysl* 8(33), 383–6(1958).—Novolaks were prepd. by the condensation of *p*-*tert*-butylphenol and HCHO (molar ratio 1:1) in 1% H_2SO_4 at 100°. After purification by distn. at 200–60° and 1 mm. Hg under N, they were fractionated from 10% MeOH with H_2O. Polyesters were prepd. from phthalic and maleic anhydride (molar ratio 1:4) and ethylene glycol by heating under CO_2. The mol. wts. of the novolaks were detd. cryoscopically in dioxane and ebulliometrically in toluene. The mol. wts. of the polyesters were detd. by end-group analysis. The melt viscosity of the novolaks was detd. in an evacuated capillary viscometer with a weighed sample fused in. The melt viscosity of the polyesters was detd. in a Höppler viscosimeter or a Höppler microplastometer. At const. temp. T, $\log \eta$ was a linear function of the mol. wt. M for the novolaks and a linear function of $\log M$ for the polyesters. The dependence on T was expressed by Vogel's equation: $\log \eta = \log B + A/(T - T_0)$. For the novolaks, $B = 1.60 \times 10^{-4}$, $A = 160 + 0.6M$, and $T_0 = 300$. For polyesters, $B = 1.62$, $A = 3761 \log (M/60)$, and $T_0 = 240$. The temp. coeff. cannot be simply related to the activation energy of viscous flow, because it also depends on structural changes such as H-bond associn.

H. Newcomlie

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

ZVONAR, V.

"Multilaminate Glass Textile, a New Construction Material," p. 822. (STROJIRENSTVI. Vol. 4, No. 11, Nov. 1954; Praha, Czech.)

So: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 4, April 1955, Uncl..

ZVONAR, V.; NOVY, K.

Working laminated plastics reinforced with Fiberglas. p. 837. (STROJIRENSTVI, Vol. 6, No. 12, Dec 1956, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 12, Dec 1957. Uncl.

CZECHOSLOVAKIA/Organic Chemistry. Synthetic Organic Chemistry. G-2

Abs Jour: Ref Zhur-Khim., No 24, 1958, 81508.

Author : Yuracka F., Zvonar V.
Inst :
Title : Synthesis of Organic Peroxides.

Orig Pub: Chem. prumysl. 1957, 7, No 4, 192.

Abstract: It is possible to have explosions during the preparation of peroxides according to Zwakha's method (Ref. Zhur-Khimiya, 1958, 61842). The danger of explosion can be eliminated by adding dimethyl-dibutyl phthalate (I) or tricresyl phosphate to the reaction mixture. Thus, a phlegmatized peroxide is obtained in liquid form or as a paste, which is used in polymerizations; for instance a 50% solution of $CH_3COOCOC_6H_5$ or the peroxide

Card : 1/2

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

ZVONAR, V.

Remarks of the synthesis of organic peroxides.

p. 192 (Chemicky Prumysl. Vol. 7, no. 4, Apr. 1957, Praha, Czechoslovakia)

Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 2, February 1958

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

ZVONAR, V.

Colorimetric determination of cobait in siccatives.

p. 512 (Chemicky Prumysl. Vol. 7, no. 9, Sept. 1957, Praha, Czechoslovakia)

Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 2,
February 1958

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

I

CZECHOSLOVAKIA/High Polymer Chemistry.

Abs Jour: Ref Zhur-Khim., No 8, 1959, 29998.

Author : Bohdanecky, M., Tanchyna, J, and Zvonar, V.
Inst :
Title : The Viscosity of Fused Low Molecular Weight Polycondensates.

Orig Pub: Chem Prumysl, 8, No 7, 382-385 (1958) (In Czech with English and Russian summaries)

Abstract: It has been found that the Vogel equation gives an adequate picture of the temperature dependence of the viscosity of unsaturated polyesters and fused phenol and p-ter-butylphenol. At constant temp log increases linearly with the MW of lacquer resins and varies as the log of the MW of polyesters. Summary by the authors.

Card : 1/1

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

80407

Z/009/60/000/01/034/038
E112/E253

5.3832

AUTHORS: Hudeček, Z., and Zvonař, V [redacted]

TITLE: The Effect of the Constitution of Polyester Resins on the Optical Properties of Corrugated Roofings

PERIODICAL: Chemický průmysl, 1960, Nr 1, pp 44-50

ABSTRACT: The authors have studied the properties of laminated glass fibres for corrugated roofing materials. These should be able to transmit as much light as possible. Ideal conditions would be if refractive indices, dispersion and heat-coefficient would be identical for both, the glass fibre and the hardened resin. It has to be born in mind that the optical properties of the resin are changed after setting and polymerisation and the problem is thus reduced to the preparation of a resin which would have identical optical properties to that of the glass fibres. The glass fibres used for the laminates were in all cases boron-glasses, free of alkali of a refractive index 1.548 to 1.553 and an Abbé number 46 to 48. The aim of the present investigation has been the establishing of the fundamental optical properties of unsaturated polyester resins, the effect of starting

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The Effect of the Constitution of Polyester Resins on the Optical Properties of Corrugated Roofings

materials and the change of optical properties during polyesterification and copolymerisation. The authors describe methods of testing. Samples to be tested were prepared by pouring the resins on glass plates and hardening at 100°C in an oven. Methylcyclohexanone-peroxide was used as initiator and cobalt naphtenate was the accelerator. The refraction indeces and mean dispersion were measured by Refracto meter, type Meopta, at -20°C, 0°C, 20°C, 40°C. The following variants were studied:

1. Effect of degree of polymerisation: It was seen that during polyesterification the refractive index increases. Particularly rapidly at the beginning of the reaction.

2. Effect of acid: The authors have studied the optical properties of polyester from maleic, itaconic, and citraconic acid with ethylene glycol. The resins were modified with phthalic anhydride. Results are tabulated, indicating that the character of the unsaturated acid has only very little influence on the optical properties. A very much greater influence is exerted by the saturated

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dicarboxylic acid which is used as modifier. The greatest increase in the refractive index is caused by chlorinated aromatic acids, such as tetrachloro phthalic acid. Effect of modifying acids are given in two tables. The authors have also established that saturated aliphatic dicarboxylic acids reduce the refractive index of the unsaturated polyester.

3. Effect of dioles: Similarly to the acids, the alcoholic components have also an effect upon the optical properties, although not quite so pronounced. The refractive index does not depend on the length of the chain but on the character of the hydroxyle groups, that means whether they are primary, secondary or terciary. The refractive index decreases with increased substitution. The presence of a chlorine in the molecule of the diole considerably increases the refractive index, but an ether-linkage works in the opposite way. The lowest refractive indeces are obtained from dipropylene glycol.

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4. Effect of Monomers: The authors have studied the effect of styrene and methyl methacrylate. Whereas the effect of styrene was negligible that of methyl methacrylate was considerable.

5. Effect of temperature: The refractive index is affected by temperature in a linear relationship but it was seen that the character of the polyester itself exerts only a small effect. The influence of the monomer is of greater importance. The authors conclude from their work that it is almost impossible to produce a glass laminate in which the optical properties of glass and resin can be completely compensated. The best method of modification of optical properties would seem to be the choice of the diole and the saturated dicarboxylic acid, while the unsaturated acids show hardly any effects. The authors suggest as starting materials 1.3-butanediole and cycloolefinic acids. A further modification may be achieved by diluting the polyester resin with methyl methacrylate. The authors were unable to eliminate the differences of thermal coefficience

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between glass and resin.
There are 6 figures, 6 tables and 8 references, 4 of which are German, 1 Czech, 1 Japanese and 1 Swedish.

ASSOCIATION: Výzkumný ústav syntetických pryskyřic a laků, Pardubice (Research Institute of Synthetic Resins and Varnishes, Pardubice)

SUBMITTED: June 30, 1959

Card 5/5

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

39002
Z/009/62/000/006/002/002
E112/E153

11.2220

AUTHOR: Zvonař, Vladimir

TITLE: Thermodynamics of fire resistance of unsaturated polyester resins

PERIODICAL: Chemický průmysl, no.6, 1962, 321-326

TEXT: Theoretical aspects of the burning and flammability of synthetic resins are discussed. A free radical mechanism is postulated which, similarly to a free radical initiated polymerisation, is characterised by chain propagation, termination, transfer and inhibition. The fire and flame retarding action of some substances, particularly the halogenated hydrocarbons, is based on chain termination but the exact mechanism is unknown. It is proposed that they function by withdrawing free hydrogen atoms or hydroxyl radical by reaction with the halogen. Halogenated hydrocarbons with more labile halogen substituents (bromine or iodine) will, consequently, provide a greater flame retarding efficiency, e.g. hydrogen, containing 15% methyl bromide, cannot, practically, be ignited. The function of antimony oxide as a fire retarding filler is discussed. Practical

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work includes the determination of the correlation of structure of resin, its thermodynamic parameters and fire resistance. Only chlorinated resin components are considered and the effect of the nature of the chlorine bond on fire resistance is determined. The method of investigation consists of comparing structurally analogous chlorinated and non-chlorinated resin components, e.g. propylene glycole (1,2); 3-chloropropylene glycole (1,2); phthalic acid; tetrachlorophthalic acid, etc. Other chlorinated hydrocarbons under investigation included: dichlorendomethylene-hexahydrophthalic-anhydride, hexachlorendomethylele-tetrahydro-phthalic-anhydride, chlorotetrahydrophthalic acid. Result: best flame-proofing action was achieved by modifying the resin with hexachlorendomethylene-tetrahydrophthalic anhydride (HET). The other chlorinated modifiers were less active. The addition of antimony oxyde improved considerably the basic fire-resistance of the polyester resin. Characteristic parameters of the burning of resins (length of flame, loss of weight, rate of burning, temperature of ignition and flame extinction) are affected by the concentration of antimony oxyde in the resin mixture, by the

chlorine content and by the temperature to which the resin is exposed. The parameters' numerical values increase with increased temperature, with the result that at sufficiently high temperatures all differences of flammability between standard- and modified resins disappear. The numerical values of the parameters decrease with an increase of the chlorine content of the resin, and this is in agreement with the free radical theory of flame inhibition.
There are 5 figures and 4 tables.

ASSOCIATION: Výzkumný ústav syntetických pryskyřic a laků, Pardubice
(Research Institute of Synthetic Resins and Lacquers, Pardubice)

SUBMITTED: November 30, 1961

ZVONAR, Vladimir

Accelerant as optical indicator of the copolymerization of unsaturated polyester resins. Chem prum 12 no.2:106-109 F '62.

1. Vyzkumny ustav syntetickych pryskyric a laku, Pardubice.

ZVONAR, Vladimir

Scientific conference on designing engineering constructions from glass laminates. Chem prum 12 no.9:525-526 S '62.

1. Vyzkumny ustav syntetickych pryskyric a laku, Pardubice.

ZVONAR, Valdimir

New development trends in the Farbwerke Hoechst Factory. Chem prum 13 no.5:Supplement:Markromolekularni latky. 13 no.5:278-279 My '63.

1. Vyzkumny ustav syntetickych pryskyric a laku, Pardubice.

ACC NR: AP6009205 SOURCE CODE: GE/0004/65/012/011/0660/0663

AUTHOR: Zvonar, V. (Graduate engineer) (Cz) 39 B

ORG: Research Institute for Synthetic Resins and Varnishes, headed by Ordelt, Z. (Graduate engineer; Candidate of Sciences), Pardubice, Czechoslovakia

TITLE: Water absorption of glass-reinforced laminates and effect of water on their elasticity modulus

SOURCE: Plaste und Kautchuk, v. 12, no. 11, 1965, 660-663

TOPIC TAGS: laminated material, polyester plastic, elasticity, porosity

ABSTRACT: The rate of liquid penetration into laminated mattrials reinforced by glass fiber has been studied, and the relationship between the elasticity modulus and the liquid content observed. The basic linear correlations between the E modulus and the liquid content were established for various temperatures. The relationships derived are valid for the state of equilibrium. Liquids used in the course of the experiment were: water, methanol, water with an emulsifier, glycerin, gasoline and mineral oil. Test laminates included the eight-layer, heat-treated plastic Y Plast 35, and the unsaturated polyester resin CHS-Polyester 104. The experiment has shown a relationship between the porosity, (regulated by the glass-reinforcement content and the surface treatment), liquid-absorbtion capacity, and elasticity modulus in the laminates. Orig. art. has: 7 figures, 2 tables, and 11 formulas.

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[KP]

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710017-2"

L 36272-66

ACC NR: AP6009285

SUB CODE: 11/ SUBM DATE: 17Aug64/ ORIG REF: 008/ OTH REF: 003/ SOV REF: 002

Card 2/2

CZECHOSLOVAKIA

ZVONAR, V

Research Institute of Synthetic Resins and Lacquers, Pardubice

Prague, Collection of Czechoslovak Chemical Communications, No 1 January 1967, pp 280-287

"Velocity of flow of liquid in capillaries."

ZVONAR, Vladimir; ZAHRADNIKOVA, Anna

Simple method for determining contact angles. Chem prum 15 no.4: 242-244 Ap '65.

1. Research Institute of Synthetic Resins and Lacquers, Pardubice.
Submitted December 17, 1964.

ZVONAREV, A. (g. Borovichi, Novgorodskoy oblasti); RAST, S., instruktor

Answers to activists' questions. Sov. profsoiuzy 18 no.11:27 Je '62.
(MIRA 15:6)

1. Gruzinskiy respublikanskiy sovet professional'nykh soyuzov, g. Tbilisi.

(Trade unions)

ZVONAREV, A.; KASPARYAN, A.

Be sensitive to efficiency suggestions. Fin.SSSR 17 no.8:67 Ag '56.
(MIRA 10:12)

(Finance)

21,1800, 21,5300

SOV/120-59-5-28/46

AUTHORS: Gus'kov, Yu.K. and Zvonarev, A.V.

TITLE: A Thermocouple System for the Measurement of Large Neutron Fluxes

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 5, pp 121 - 122 (USSR)

ABSTRACT: In nuclear-reactor experiments, it is useful to have a simple neutron detector which may be used to measure, rapidly and in a wide range, neutron fluxes in the presence of large γ-ray background. A simple thermocouple system is described in the present paper and is shown in Figure 1. The detector consists of two thermocouples made up of chromel and copper-nickel (56% Cu, 43% Ni) junctions. The detector is shown schematically in Figure 1, in which 1 is an aluminium frame, 2 is an aluminium disc which centres the detector in the reactor channel, 3 is an insulator, 4 are the free ends of the thermocouples, 6 is a steeltube with U_3O_8 enriched (75%) with U^{235}, 7 is a steel tube filled with Pb_3O_4, 8 is the common end of the thermocouples (the Cu-Ni alloy).

A Thermocouple System for the Measurement of Large Neutron Fluxes

The amount of U_3O_8 and Pb_3O_4 in the two tubes is about the same. Figure 2 shows the calibration curve for the detector in which the neutron flux is plotted horizontally and the output of the thermocouple in mV, vertically. As can be seen from Figure 1, the thermocouples are connected in opposition so that the e.m.f. measured across the free chromel ends is equal to the difference in the thermal e.m.f. of the two thermocouples. The measured thermal e.m.f. difference is a measure of the heating due to the fission of U^{235}. The heating of the thermocouple due to the housing medium and γ-rays is automatically compensated. The instrument has been tested in an experimental cooled channel of an atomic power station, using fluxes between 5×10^9 and 1.5×10^{13} neutron/cm^2 sec. One of the disadvantages of the instrument is that it is not linear for large neutron fluxes. The settling time of the system is about 5 - 10 min.

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A Thermocouple System for the Measurement of Large Neutron Fluxes

There are 2 figures and 4 references, 1 of which is Soviet, 1 Swedish and 2 English.

SUBMITTED: September 4, 1958

4

Card 3/3

24(0) 21(4) SOV/89-7-2-13/24

AUTHORS: Gus'kov, Yu. K., Zvonarev, A. V.

TITLE: Measuring the Electrical Resistivity of Boiling Nitrogen Under Irradiation in a Reactor (Izmereniye elektricheskogo soprotivleniya kipyashchego azota pri obluchenii yego v reaktore)

PERIODICAL: Atomnaya energiya, 1959, Vol 7, Nr 2, pp 165 - 166 (USSR)

ABSTRACT: The measuring instrument consists of a Dewar flask with two 2.4 cm^2 copper plates (there is an outline sketch) to which wires of the BPTE wire are soldered. The metallic shielding of the cable reaches to the electrodes up to 10 mm. The electrodes are 5 mm apart. The Dewar flask is filled with 118 g of liquid nitrogen. The resistance was measured with the TO-1 instrument (measuring range 10^6 to $10^{12}\ \Omega$). The resistance between the two BPTE cables at a neutron flux of $1.5.10^{13} n/cm^2.sec$ is more than $10^{10}\ \Omega/m$. The electrical resistance of liquid nitrogen was $\sim 10^{12}\ \Omega/cm^3$ at a neutron flux of $10^{11}/cm^2.sec$ and $4.10^9\ \Omega/cm^3$ at a flux of $1.5.10^{13}\ n/cm^3.sec$. When sufficient liquid evapo-

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rated to leave the electrodes free the resistance decreased to $7.10^7 \Omega/cm^3$. During irradiation in the reactor the nitrogen boiled very strongly and the evaporation time decreased by one order of magnitude. A. K. Krasin, Doctor of Physical-mathematical Sciences, took an interest in this work. A. G. Vishnyak cooperated in the experiments. There is 1 figure.

SUBMITTED: April 18, 1959

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69094

S/120/60/000/01/047/051
E032/E314

AUTHORS: Gus'kov, Yu.K., Zvonarev, K.V. and Klychkova, V.P.

TITLE: Preparation of Uranium Layers by Evaporation in Vacuo

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, Nr 1, pp 143 - 144 (USSR)

ABSTRACT: In nuclear physics it is frequently necessary to use specimens having a uranium layer deposited on them. The present authors have developed an evaporator which will work for 50 hours and can produce layers of U_3O_8 30 - 40 μ thick in a single evaporation. Various types of evaporators were tried, most of which did not have a sufficiently long working life. The most successful was that shown schematically in Figure 1. The evaporator consists of two concentric and cylindrical tungsten spirals made of a wire 1 mm in diameter. The spirals end in a cone, as shown and are surrounded by a tantalum screen (3). 4 - 5 g of U_3O_8 could be placed in the evaporator and the rate of evaporation was 10 g/h. The corresponding rate of growth of the U_3O_8 layer was

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Preparation of Uranium Layers by Evaporation in Vacuo

1 - 1.5 mg/min. The power required was about 1 kW. The evaporation was carried out in a vacuum of 10^{-4} to 10^{-5} mm Hg and provision was made for replacing the U_3O_8 in the spiral without opening up the vacuum chamber. In this way 50 - 80 μ thick layers of U_3O_8 could be obtained without difficulty. The uniformity of the deposit was controlled by measuring the β-activity at various points on the specimen (Damodaran, Ref 1). In Figure 1 the notation is as follows: 1) tungsten plate, 5 mm thick; 2) lower screening plate made of tantalum, 0.1 mm thick; 3) tantalum screen, 0.1 mm thick; 4) outer tungsten spiral; 5) tantalum support for the outer spiral, 01 mm thick; 6) inner tungsten spiral; 7) tantalum cover 0.5 mm thick supporting the inner spiral; 8) nickel screen, 0.5 mm thick; 9) mica; 10) porcelain tube; 11) nickel disc, 5 mm thick and containing an insert for the specimen; 12) tungsten nut; 13) tungsten rod.

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E/032/E314

Preparation of Uranium Layers by Evaporation in Vacuo

This is an abridged translation.
There are 1 figure and 4 references, 3 of which are Soviet and 1 is English.

SUBMITTED: December 27, 1958

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4

21.1000,24.6820

77227
SOV/89-8-1-21/29

AUTHORS: Gus'kov, Yu. K., Zvonarev, A. V., Klychkova, V. P.

TITLE: A Study of Electromotive Forces Generated in Semiconductor Systems Containing Uranium, When Irradiated in Reactors. Letter to the Editor

PERIODICAL: Atomnaya energiya, 1960, Vol 8, Nr 1, pp 72-75 (USSR)

ABSTRACT: It is known on the basis of light, X-ray, γ-ray, β- and α-particle irradiation of hole-electron semiconductor systems that an electromotive force can be generated. The authors investigated the effects of fission particles originating in one member of the system chosen to be a uranium semiconductor compound. One had to be careful to choose a material which will not change appreciably its electrical properties. Semiconductors with a large number of original lattice defects satisfy such a requirement, and, having the choice between the polycrystalline semiconductors and monocrystals with appreciable amount of impurities, the authors preferred the polycrystalline oxide

semiconductors. In all experiments U_3O_8 served as the hole semiconductor with a high work function, and for low work function electron semiconductor the authors utilized BaO, TiO_2, MgO, and Al_2O_3. Gold and cooper were electrodes for U_3O_8, magnesium, and titan for the electron semiconductor. U_3O_8-BaO and U_3O_8-TiO_2 samples were obtained by thermal vacuum evaporation of semiconductor and electrode layers. In the case of U_3O_8-Al_2O_3, a layer of Al_2O_3 was sprayed on a titanium base, and then U_3O_8 was evaporated in vacuum, followed by gold or cooper. This did not work for MgO, so a ceramic layer of MgO, 0.5-mm thick was taken on which a magnesium electrode on one side, and U_3O_8 with gold or cooper on the other side was sprayed. Working surfaces were 6

and 2.8 cm^2, and thickness of U_3O_8, BaO, TiO_2 was 5 to 20 μ and that of A_2O_3 was 100 to 200 μ. Samples were held between bronze holders, with cooper-constantan thermocouple on one of them for temperature determination. Finally, the whole combination was enclosed in aluminum containers and irradiated in the experimentally cooled channel of the atomic reactor, with a density of neutrons and γ-rays between 10^{10} to 10^{13} $cm^{-2} \cdot sec^{-1}$ (depending on its power level). Sample temperature was approximately 120° C. The authors investigated the emf V_{∞}, short-circuit current I_{sc}, load characteristic, surface temperature of the samples, and their resistance R at a potential difference of 1.4 v direct and in reverse. Volt-ampere characteristics were taken before and after exposure. All samples showed presence of an emf. Figure 1 represents the case of U_3O_8-MgO.

A Study of Electromotive Forces Generated in Semiconductor Systems Containing Uranium, When Irradiated in Reactors. Letter to the Editor

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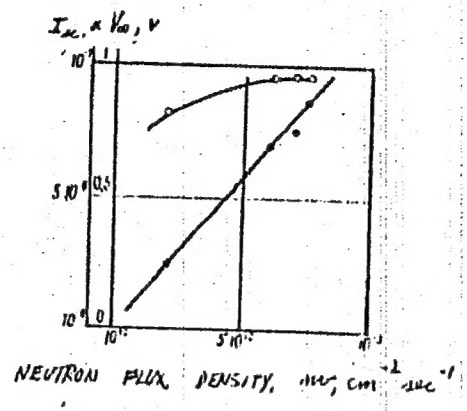

Fig. 1. Emf V_{oo} (o) and current I_{cs} (•) vs neutron flux density nv for an U_3O_8-MgO sample.

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On Fig. 2 is shown the load characteristic, similar to that of a valve photoelement. Neutron flux density was equal to $8 \cdot 10^{12}$ $cm^{-2} \cdot sec^{-1}$. Figure 3 represents typical volt-ampere characteristics of an U_3O_8-Al_2O_3 sample, before and after exposure. A small valve effect is observable after exposure; during irradiation the rectifying coefficient at 1.4 v was between 2 and 10. Figure 4 shows large variations of all characteristics. Special experiments were performed to check the role of the uranium fission fragments in the emf generation process. Same samples irradiated with γ-rays showed three times weaker effect than in the case of neutron irradiation. This compares favorable with the relative ionization of γ-rays and neutrons. One double sample of U_3O_8-Al_2O_3 was prepared, utilizing on one side a uranium sample 10% enriched in U^{235} while on the other, natural U_3O_8 was used. The

A Study of Electromotive Forces Generated in Semiconductor Systems Containing Uranium, When Irradiated in Reactors. Letter to the Editor

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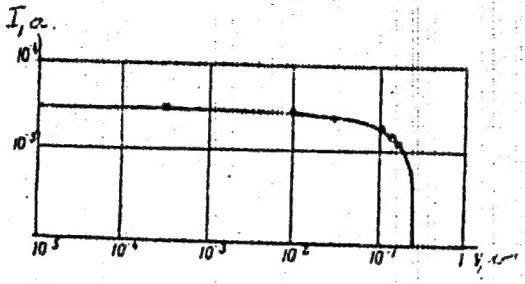

Fig. 2. Load characteristics of an U_3O_8-MgO sample.

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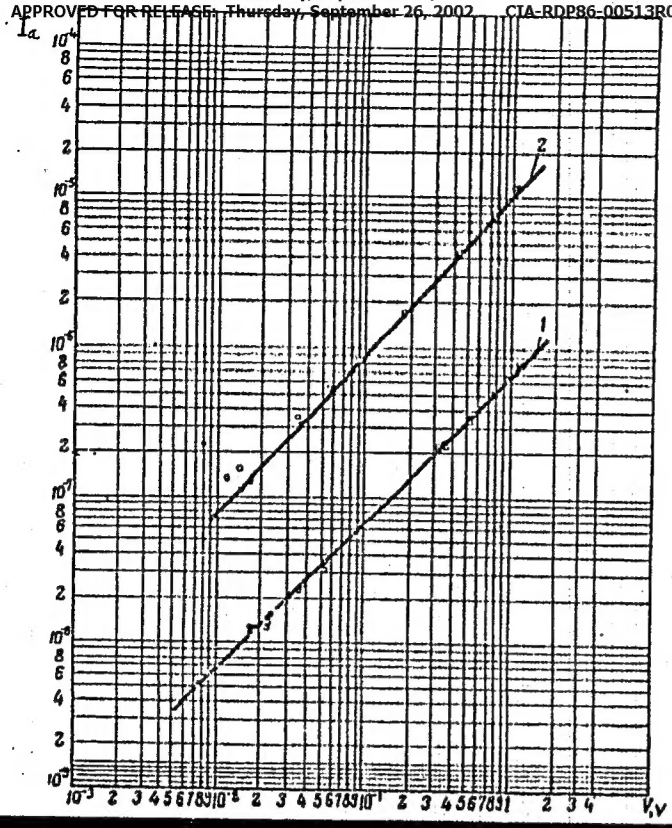

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Fig. 3. Volt-ampere characteristics of the U_3O_8-Al_2O_3 sample before (curve 1) and after (curve 2) exposure in reactor: •, negative potential on the titanium electrode; o, positive potential on the titanium electrode.

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